EVALUATION OF USAID/EL SALVADOR'S

PUBLIC SERVICES IMPROVEMENT PROJECT

(519-0320)

PREPARED BY

CAMBRIDGE CONSULTING CORPORATION

FOR USAID/EL SALVADOR

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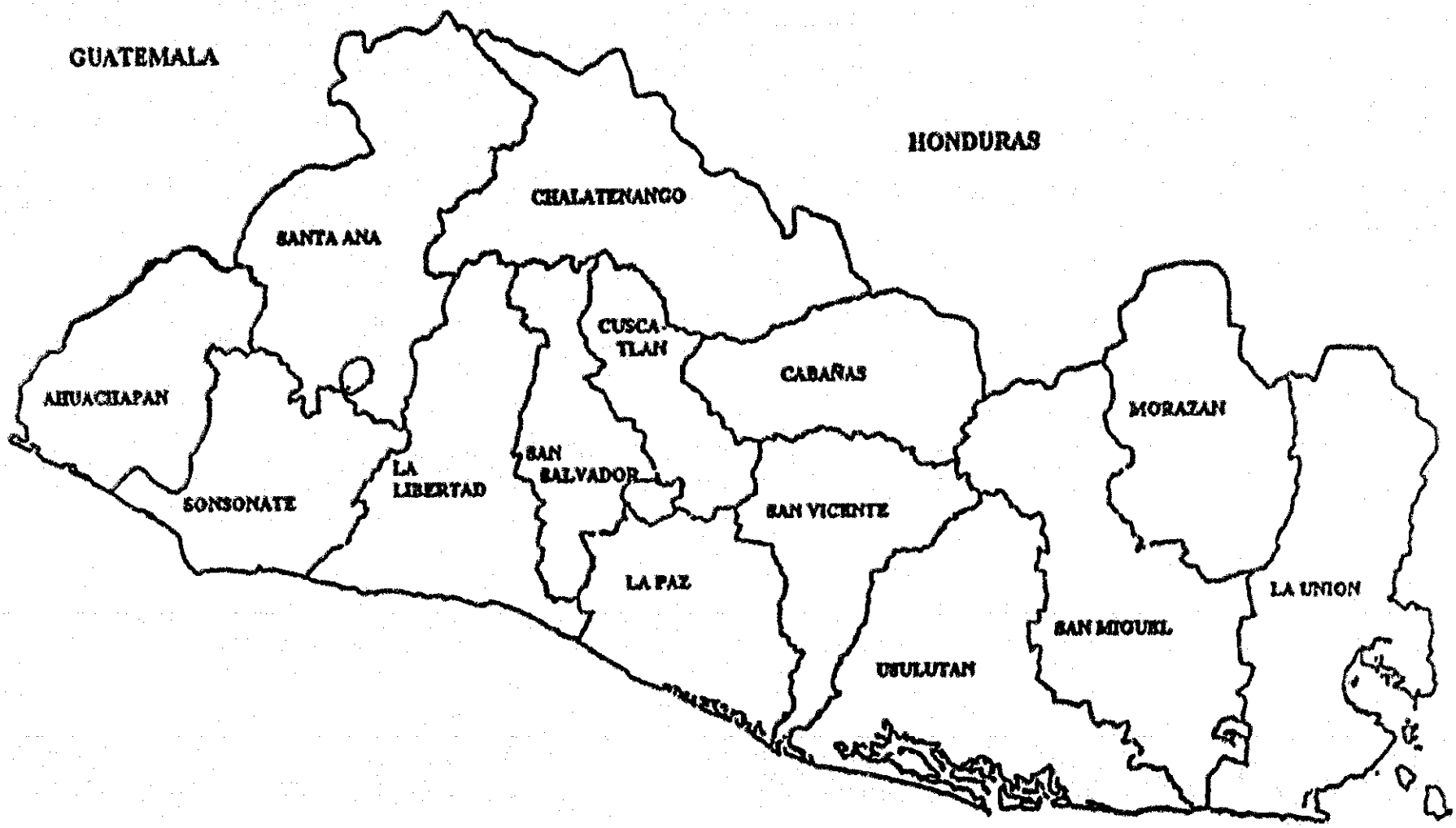
GLOSSARY

AME	Administración de Maquinaria y Equipo (Machinery and Equipment Administration); a dependency of MOP
ANDA	Administración Nacional de Acueductos y Alcantarillados (National Water and Sewer Administration)
CABEI	Central American Bank for Economic Integration
CARE	Cooperative for Assistance and Relief Everywhere, Inc., a U.S. PVO
CEL	Comisión Ejecutiva Hidroeléctrica del Río Lempa (Salvadoran Hydroelectric Authority); National Electric Power Authority
CEPA	Comisión Ejecutiva Portuaria Autónoma (Autonomous Port Authority); owns and operates Salvadoran national airports, ports and railways
CD	Condition Precedent
CFA	Consolidated Fleet Analysis System
COLON	Salvadoran unit of currency (Colones 8.75 to one US dollar in November 1994)
COMURES	Corporación de Municipalidades de la República de El Salvador (Corporation of Municipalities of the Republic of El Salvador)
CREA	Creative Associates; a U.S. firm operating in El Salvador as a non-profit organization
DDR	Division de Desarrollo Rural
DGC	Dirección General de Caminos (General Directorate of Roads); a dependency of MOP
DI	Democratic Initiatives
DUA	Dirección de Urbanismo y Arquitectura (Directorate for Urbanization and Architecture); a dependency of MOP
EOPS	End of Project Status

FENADESAL	Ferrocarriles Nacionales de El Salvador (Salvadoran National Railroad)
FIS	Fondo de Inversión Social de El Salvador (Salvadoran Social Investment Fund)
GOES	Government of El Salvador
HCOLC	Host Country Owned Local Currency (Colones in El Salvador)
IDB	Inter-American Development Bank (Banco Interamericano de Desarrollo)
IRD	Infrastructure and Regional Development Office of USAID/El Salvador
ISDEM	Instituto Salvadoreño de Desarrollo Municipal (Salvadoran Institute for Municipal Development)
LBII	Louis Berger International, Inc.; the company that fielded the technical assistance team under Project 519-0320
LOP	Life of Project
MCH	Maternal Child Health
MEA	Municipalidades en Acción (Municipalities in Action); a GOES/USAID program for the strengthening of municipalities and local level democracy by financing small infrastructure projects carried out by, or under the supervision of, municipalities
MID	Major Infrastructure Division of IRD
MOH	Ministry of Health (MSPAS in Spanish)
MOH-CH	Ministry of Health Community Health Division
MOP	Ministerio de Obras Públicas (Ministry of Public Works)
MOU	Memorandum of Understanding
MU	Management Unit
NGO	Non-Governmental Organization
NRP	National Reconstruction Program
OHE	Office of Health and Education of USAID/El Salvador

PSC	Personal Services Contractor
PACD	Project Assistance Completion Date
PCI	Project Concern International; a US PVO
PIL	Project Implementation Letter
PIOs	Project Implementation Orders
PLANSABAR	Ministry of Health Potable Water Agency
ProAg	Project Agreement
PVO	Private Voluntary Organization
RUD	Rural and Urban Development Division of IRD
SETEFE	Secretaría Técnica del Financiamiento Externo (Technical Secretariat for Foreign Financing)
SIAMV	Sistema de Administración de Mantenimiento Vial (Road Maintenance Administration System)
SRN	Secretaría de la Reconstrucción Nacional (Secretariat for National Reconstruction)
TA	Technical Assistance
USAID	United States Agency for International Development
WID	Women In Development
WS&S	Water Supply and Sanitation

MAP OF EL SALVADOR



EXECUTIVE SUMMARY

Background

The Public Services Improvement Project (519-0320) was authorized during a period of ongoing civil conflict and economic stagnation. Civil war damage to, a lack of expansion of, and failure to perform adequate maintenance on infrastructure had reduced the provision and capabilities of public services, especially in rural areas, and had contributed to reduced health status and lower economic productivity. Against this backdrop, a Project Grant Agreement (ProAg) was signed with the Government of El Salvador (GOES) on August 30, 1989 for a $75 million USAID contribution and a $60 million equivalent GOES counterpart contribution, i.e., a $135 million project. These levels were later lowered to USAID $67.9 million and GOES $55.9 million, for a final budget total of $123.9 million.

The purposes of the Project were to:

- restore and preserve vital public services provided by the infrastructure agencies;
- improve and sustain the access of rural populations to markets; and
- increase access of the rural populations to potable water supply and sanitation systems (WS&S) and improve the proper use of such systems by beneficiary families.

As a result of the formal signing of Peace Accords on January 16, 1992, Project Amendment No. 7 was executed on September 7, 1992. The Project purpose statements were amended to include: "To support GOES efforts under the National Reconstruction Plan by intensifying maintenance and repair programs on public physical infrastructure, and increasing access to services." (This fourth purpose focuses some Project activities on El Salvador's ex-conflictive zones.)

Project 519-0320 had an original Project Assistance Completion Date (PACD) of September 30, 1994. Project Amendment #9, executed on April 18, 1994, changed the PACD to September 30, 1996 for the WS&S and health education interventions carried out by municipalities and private organizations (U.S. PVOs/NGOs) within Components III and V. In a sub-agreement executed on September 22, 1994, the implementation period for selected activities of Components I, II, IV and V was extended to March 31, 1995.

The Project consists of the five components shown in the table on the following page:

Project Budget by Component and Funding Source

($ Millions)

	COMPONENT	USAID	GOES	TOTALS
I.	PUBLIC SERVICES RESTORATION	23.06	4.47	27.53
II.	RURAL ROAD DEFERRED MAINTENANCE AND REPAIR	8.12	31.32	39.44
III.	WATER SUPPLY, SANITATION AND HEALTH	12.44	8.98	21.42
IV.	INSTITUTION STRENGTHENING AND PROJECT SUPPORT, EVALUATION AND AUDIT, INFLATION AND CONTINGENCY	11.35	.38	11.73
V.	POST WAR MAINTENANCE, REPAIRS AND RECONSTRUCTION	12.95	10.80	23.75
	TOTALS	67.92	55.95	123.87

Accrued expenditures as of November 1994 were $105.2 million, $55.9 million by USAID and $49.3 million by the GOES.

The Evaluation Process

USAID/El Salvador contracted Cambridge Consulting Corporation (CCC) to conduct the Project evaluation as two distinct activities. The first activity was a final evaluation of Component I - Public Services Restoration; Component II - Rural Roads Maintenance and Repair; Component IV - Institutional Strengthening, Project Support, Monitoring and Evaluation; and all elements of Components III - Water Supply, Sanitation and Health, and V - Post War Maintenance, Repair and Reconstruction except those of WS&S and health being implemented by municipalities and U.S. PVOs/NGOs. This final evaluation was needed to provide USAID/El Salvador with: a) an independent assessment of the progress and impact of the Project; and b) recommendations regarding public services improvement activities and the monitoring of Project outcomes.

The second activity was an interim evaluation for the parts of Components III (Water Supply, Sanitation and Health) and V (Post War Maintenance, Repair and Reconstruction) which involved WS&S activities implemented by U.S. PVOs/NGOs and Municipalities.

These efforts were evaluated to provide USAID/El Salvador with information and recommendations for possible improvement of the WS&S activities and to serve as a guide for activities to be planned under the 24-month extension of the Project through September 30, 1996.

The CCC Team began work in El Salvador on November 17, 1994. The Team consisted of Ronald A. Witherell, Team Leader; Lewis B. Taylor, Jr., Professional Engineer; James L. Roush, Institutional Development Expert; and Mary Lindsay Elmendorf, Development Anthropologist. See Annex B for more background on the team members.

The Team spent five and a half weeks in El Salvador, departing on December 23rd. During this period, they reviewed documentation and reports; interviewed available government, Mission and non-governmental organization personnel who worked on the Project; and visited Project sites to interview Project beneficiaries and observe the infrastructure, commodities and systems which the Project funded. The Team submitted preliminary and final draft reports, had a debriefing session with USAID and received comments on the preliminary draft report. USAID also provided CCC with comments on the final draft report.

Overview of Project Implementation

With the exception of the high priority Component I, the Project got off to a slow start due to various factors:

a) the FMLN offensive in late 1989 which resulted in the evacuation of some USAID personnel and hampered the recruitment of additional personnel for the Project office (the Major Infrastructure Division of the Office of Infrastructure and Regional Development [IRD/MID]);

b) delays in the preparation of the PIO/T to start the contracting process for the Technical Assistance (TA) contractor (the latter came on board 13 months into the Project);

c) the unfamiliarity of the implementing agencies with USAID procurement regulations and their reluctance to follow them (particularly the National Water and Sewer Administration [ANDA]); and

d) the need to create Management Units (MUs) in ANDA and DGC (the Directorate General of Roads) to oversee and carry out the implementation of Components III and II respectively.

Component I was successful in that it made possible the restoration of all critical services in accessible areas whenever they were interrupted throughout the war. Because of its slow start and higher than expected construction costs, Component II was unable to achieve its road rehabilitation targets, but it is still judged successful (see Project Impact section below).

Component III water and sanitation achievements with ANDA were disappointing due to a number of factors:

a) a poor initial design;

b) the need to work with an entity which had no prior experience or interest in working in rural areas;

c) a lack of cooperation from a GOES water supply agency which was excluded from the Project;

d) poor organization within USAID to deal with the Component;

(1) until 1993, the Health Office refused to take any responsibility for the health-related activities of Component III; and

(2) MID suffered from IRD organizational and staffing problems and an inability to recruit an appropriate person to take primary responsibility for the Component; and

e) strained relations between ANDA and USAID related to Host Country Contracting problems, inappropriate actions by some USAID personnel and one of the TA personnel, and USAID policy shifts (calling for a re-design in mid-1992, not fully supporting it, then reversing its position, and finally backing away from ANDA completely in late 1993).

The shortfall in accomplishments under Component III is being made up in part from the decision to turn over the implementation activities to three U.S. PVOs/NGOs and the municipalities and by extending the Project for two additional years.

Project Impacts

The evaluation team had planned to base its assessment of Project impact on the goal and purpose indicators of the Logical Framework. It found, however, that most of the indicators were not appropriate at this time, in part because the LogFrame was not revised in early 1992 when the civil war ended, and due to the fact that the surveys and studies needed for the "means of verification" have not been performed. The team has looked at the general intent of the Project and then came up with what it believes are reasonable indicators of impact, some of which were intended, some not.

The principal impacts of the Project follow:

- Component I activity permitted the continuity of utility and transportation services during the war which helped preserve the national economy and the livelihoods of persons working in the industrial and commercial sectors. The continued availability of these services made possible an economic climate which attracted foreign investment even before the Peace Accords. Maintaining these services also had a positive effect on the quality of life of many Salvadorans.

- Activity under Components II and V will have resulted in the rehabilitation of over 1,200 kilometers (or 15 percent against a target of 20 percent) of rural roads by March 31, 1995, of which one-third will have been accomplished in the ex-conflictive zones during the last two years. While this is less than originally targeted, it clearly has had a significant impact in the rural areas, especially in the extremely depressed ex-conflictive zones. The mobility impact has been significant, as traffic has been restored on previously impassable roads. Buses are seen running on roads, which until recently, were travelled only by trucks at slow speed and at considerable expense. Roads on the national network which were closed as recently as a year ago are now open. The increased road construction activity has fostered an expanded in-country capability for road rehabilitation and maintenance. The number of qualified contractors increased from six (6) in late 1991 to 46 at the height of construction; this expansion helped the Project respond quickly to the ex-conflictive zones after the Peace Accords were signed. The Project has also demonstrated the ability of the DGC to manage a sizable program of rehabilitation and maintenance in the rural areas. Their expanded capabilities have helped pave the way for the forthcoming road rehabilitation activities now being funded by the Inter-American Development Bank (IDB).

  [The successful rehabilitation of rural roads also points out the importance of increasing substantially the funding for road maintenance and the need for the DGC to expand its road maintenance work through private contracting; see the Recommendations section below and the sustainability discussion in Chapter V, Section A.]

- ANDA activity under Component III has resulted in 100,000 rural residents acquiring, or re-acquiring, access to an adequate source of potable water. While these results are considerably less that planned, the final results in this area will be significantly increased as a result of the ongoing activities of the U.S. PVOs/NGOs and municipalities under Components III and V (which continue until September 1996). Their actions are expected to benefit an additional 171,400 people.

- Component III and V activities are also expected to serve as a catalyst and example for an expansion of activities funded by the IDB. Because of Project-funded research on latrines and the subsequent success in community acceptance and use, the Salvadoran Investment Fund (FIS) is planning to resume building latrines in conjunction with their water supply activities. FIS and others now appreciate the ace of integrating health education and sanitation activities with the provision of water. Project 519-0320 has also demonstrated the availability of substantial local contract well-drilling capabilities.

- There are no health impact data available for the communities with new or improved water systems and latrines. In the communities visited by the team, however, there was a strong feeling among beneficiaries, especially mothers, that their children are getting sick less frequently. More than half of the families visited commented that with safe water and latrines, they would all be healthier. If nothing else, this indicates that the Ministry of Health and Social Welfare (MOH) health promoters have been effective in bringing health messages to the community.

- The early resistance to the use of composting latrines (aboneras) has been largely overcome with more adequate orientation and promotion about them. A recent MOH document reports 72 percent proper or effective use of the abonera latrines constructed under Project 519-0320. CREA (a Project NGO) has reported 95 percent effective use in one community. Field observations by the evaluation team in six communities confirmed regular use of latrines.

  [One possible negative impact could come from having to empty the excreta too soon. Several families told the evaluation team that their latrines were filling in three or four months, making the curing time only six to eight months. This is generally assumed to be too short a time for safe use, although the MOH has told communities that eight months is acceptable. Both CREA and CARE are monitoring their installations to find out if less ash can be used or if the chambers are too small.]

- Another impact of the WS&S activities has been the strengthening of local user groups at the community level. This is reflected in the participatory nature of the interventions, including the involvement of women as key actors in their communities during the planning, implementation, operation, maintenance, and effective use of the facilities. The evaluation team was impressed with the knowledge of the members of the local water and health committees, as well as local residents.

  [Most of the team visits were to communities which have benefitted from PVO/NGO activity, because this activity is still on-going. It is possible that the strength of the local groups may not be as great where the facilities were constructed or rehabilitated by ANDA contractors. The current situation in those communities should be reviewed as soon as possible to verify results and, if appropriate, provide feedback to the U.S. PVOs/NGOs currently carrying out sub-projects. In Chapter V, Section B, requirements for sustaining meaningful WS&S activities after the Project is finished are discussed.]

- Component IV activities have strengthened the management capabilities of the DGC (as discussed above) and the Machinery and Equipment Administration (AME). USAID funded the establishment of AME under a previous project and provided it with support under both Components II and IV of Project 519-0320. AME is now effectively servicing the vehicles and heavy equipment of the Roads and Urbanization Directorates. AME's personnel are fully funded by the GOES regular budget, in contrast to 100 percent on the extraordinary budget at the beginning of the Project. To achieve its potential, AME still needs additional funding for equipment and specialized vehicles, a better physical set-up in San Miguel, and a more flexible system for small procurements. Nevertheless, it has come a long way and has become a strong institution.

- The employment generation impact of the Project has been significant. No employment statistics are available directly, but funds spent for salaries can be estimated as a percentage of costs, using experience from similar work. Thus, it is estimated that the Project generated direct employment on the performance of sub-projects of approximately 18,300 person years and indirect employment generated in other parts of the economy of about 40,000 person years.

- The training provided to individuals, especially in the Management Units, has resulted in skills which are readily marketable in the private sector, as evidenced by high turnover in some Components. Thus, the Project has been career enhancing for individuals and has made a small contribution to the productivity of the economy.

- The DGC Management Unit developed managers who are of considerable value to the DGC. A former manager of the MU has been named manager of the much larger highway and road program funded by loans from the IDB, the Central American Bank for Economic Integration (CABEI), and Japan. A deputy manager of the MU has been named a deputy to the acting DGC Director General. Thus, there is reason to believe that systems and processes which proved effective in the MU may be adapted in other parts of the DGC.

- After the war, Component IV support was provided to CEL (the Salvadoran Electric Power Authority) and CEPA (Salvadoran Ports, Airports, and Railroads Authority) to improve or expand their computer systems and to improve warehouse management. CEPA communications with its subsidiary organizations have been substantially improved. The Acajutla port is more efficient in managing port operations.

- The Project has also highlighted the need for change in the GOES agencies responsible for assuring the delivery of public services to rural areas and small municipalities, in particular for roads and WS&S.

Principal Recommendations

The principal recommendations of this evaluation follow:

- Vertical timbers need to be added to Pier "B" at Acajutla as soon as possible, as parts of the pier are already in service, and there is a serious deficiency in the design of the pier protection system that, unless corrected, could lead to destruction of part of the system funded by this Project.

- In response to the Machinery and Equipment Administration's (AME) financial problems (inadequate funds for spare parts, vehicles and training), USAID should consider:

  (a) restoring some of the cuts in AME's current Action Plan funding, especially for spare parts, specialized equipment and vehicles, and local training. USAID's large investment in AME and its critically needed services are at risk; and

  (b) recommending to the Ministry of Public Works (MOP), with an agreement to fund, a special study to prepare options for AME development over the next five years (including the budgetary implications of the options presented). It is assumed that the study could be funded under the existing Project TA contract.

- AME should adopt a policy of procuring on the local economy from commercial sources, or rapid direct, of all possible spare parts, with the objective of reducing parts inventories to an irreducible minimum. For this policy to be meaningful, a procurement system should be designed and installed which minimizes bureaucratic procedures and relies heavily on post-audit for the control of inventories.

- USAID should:

  (a) remind the GOES in writing of the special covenant in the ProAg that the GOES will provide, during the life of the project and after the Project is completed, budgetary support to MOP at a level adequate to continue the system of regular maintenance of roads; and

  (b) request the GOES to increase funding for road maintenance and the maintenance of the equipment needed for this work.

- The GOES should develop a policy and specific formula for the distribution of funds to the DGC and the municipalities for r ` ` maintenance and the improvement on roads of all of the lower classifications, perhaps through distributions from gasoline tax receipts.

- The MOP/DGC should be urged to make maximum use of the computerized Road Maintenance Administration System (SIAMV) in order to assure the best feasible maintenance for the roads and, thereby, help to assure the sustainability of the road system.

- The MOP/DGC should be encouraged to implement its policy of private contracting for road maintenance and begin to develop the methodologies with which this policy can be carried out. To accomplish this, the DGC should develop a plan of action and a schedule for achieving a fully funded maintenance program with 75 percent of the field work performed by contract by the year 2000.

- The design of USAID's proposed Social Sector Reform Activity should recognize that effective WS&S interventions are important to lowering morbidity and mortality from diarrheal diseases and incorporate at least pilot WS&S activities into the new Activity, including some participative research which might then be used to provide guidance to the large IDB and World Bank investments expected in the sector.

- The work and financing of the U.S. PVOs/NGOs in WS&S should continue and should be expanded and extended if possible. Improvements in WS&S are, as they were when Project 519-0320 was authorized, high priority health interventions.

- To achieve the objectives of the Component, USAID should continue to closely monitor the design and construction of Project WS&S activities and should pay particular attention to the health education aspects and the community organization and management systems. The Municipalities in Action and the Municipal Development Program probably can and should assist with the community organization efforts.

- The GOES should institutionalize by suitable legislation a national organization or organizations to make available to water system agencies and small municipalities the appropriate TA and policy guidance, and sources of financing, by both grants and loans.

- All water committees, commissions, cooperatives, management entities, etc. should be so organized as to come under cognizance of the municipal government for oversight and guidance, whether or not the system is actually operated by the municipality. As the elected official closest to the people, mayors are the first place a system's manager should look for assistance. When water officials do not get results, they can point out their problems to the voters at the next election. The relationship of the municipalities to independent systems should be set forth clearly in appropriate legislation.

- The GOES should relieve ANDA of responsibility for WS&S outside the greater San Salvador metropolitan area as fast as the municipalities can be trained and have developed the capability to take over and operate their ANDA-owned systems. However, before the turnover, ANDA should put the systems in top condition.

- The GOES should begin to study possible sites for potable water reservoirs. The water table in El Salvador is dropping and in some places wells have ended up as dry holes. The time probably is not far away when urban centers and even small towns will have to begin to build relatively small surface water reservoirs and water treatment plants in order to assure their water supply.

- Delivery of commodities needed to support Project start-up can be expedited by USAID authorizing the TA Contractor's Home Office to purchase immediately after contract signing. Purchasing at least some portion of the necessary equipment at the onset of Project activities (through the GSA schedule) would facilitate the early planning and implementation activities.

Principal Lessons Learned

The Principal Lessons Learned from the Project are set forth below:

- **The more complicated the implementation arrangements of an activity, project, or sub-project, the higher the risk of implementation failure.** One reason Component III WS&S activities failed was that prior to U.S. PVO/NGO and municipality involvement, there were too many parties involved and the inter-institutional and intramural timing and coordination requirements were too great.

- **PIOs for services or commodities which are critical to initiating implementation or allowing implementation to be successful should be issued immediately following the signing of a Project Agreement.** The PIO/T for the contract team was not issued for six months, delaying the start-up of various activities. Moreover, vehicles for the TA team were not ordered until after the team arrived (13 months into the Project).

- **Large and complex Projects, especially those with serious implementation problems, require strong management.** A major reason that Project 519-0320 did not begin to make strong progress until 1992 were the organizational and staffing problems within IRD which existed for an extended period.

- **Special implementing units for projects or activities can be helpful to the implementation process; however, they can also be an impediment to institutional improvement.** The staff of the implementing unit may receive valuable training, but if these personnel are on contract, they may seek better positions during their employment (as a result of their new skills) and probably will be lost to the agency at the end of the project anyway. In addition, improved management and other systems established for the implementing unit may not permeate into the rest of the agency.

- **USAID funds and/or influence within a country can be such that it can get the head of a host country agency to agree to implement a project or activity which the agency cannot handle or is not truly interested in doing. When this happens, USAID may find that the agency as a whole is structurally unwilling and/or unable to devote the necessary attention to the project or activity to make it work.** In this Project, ANDA is the case in point of this issue.

- **A project to maintain basic infrastructure may be a critical need during a civil war in order to avoid economic collapse. Having such a project in place at the end of the war can also accelerate the implementation of reconstruction interventions.** This was the case with Project 519-0320, which was able to focus substantial resources relatively quickly on the post-war requirements of the GOES National Reconstruction Program.

- **Water supply and sanitation infrastructure construction projects in rural areas will not have the desired health impact, nor be sustainable, unless there is organized community participation and meaningful (to the community) health promotion activities preceding, during, and after the construction period.** At the beginning of Project 519-0320, there were examples of inadequate health messages and attempts to construct facilities without community involvement. These sub-projects had to be re-done by the U.S. PVOs/NGOs at a later stage.

- **Health education designed to encourage the proper use of new water and sanitation facilities is rarely effective unless it is coordinated with continued monitoring and support by local groups, e.g., Water and/or Health Committees, and carried out in cooperation with mothers, lay health promoters, teachers and other local personnel.** This lesson also had to be learned by the MOH and ANDA managers responsible for the implementation of this Component's activities. The lack of coordination in the field between the health educators and the ANDA construction crews resulted in situations where communities lost interest in the health education messages because the builders didn't show up to construct the systems in a timely manner. With no action forthcoming from the water system builders, the communities lost their eagerness and forgot the lessons of the health promoters.

- **The possibility of unauthorized use, at least from USAID's standpoint, of Project funded vehicles commonly exists in USAID projects.** During project design, the vehicle use policies and controls of each agency receiving vehicles should be reviewed. If they are inadequate (from USAID's standpoint), a Memorandum of Understanding (MOU) acceptable to USAID should be entered into between USAID and the implementing agency to cover use of the vehicles USAID is to provide. Moreover, a statement of policy and required controls on vehicles should be included in the ProAg to strengthen USAID's position.

- **Commodity end-use rules need to be re-examined and revised so that they are not an encumbrance to implementation.** The only way that Project 519-0320 implementing agencies could satisfy USAID rules (or TA Contractor interpretations of those rules), was to segregate the spare parts purchased by USAID into a separate warehouse from the normal parts distribution point. This is highly inefficient and wasteful.

I. PROJECT SETTING

El Salvador is located in Central America and is one of Latin America's smallest countries, with a land area the size of the State of Massachusetts and a population of approximately 5.3 million. Throughout El Salvador's modern history, this densely populated, principally agricultural country has experienced considerable social and political conflict, stemming primarily from the fact that a large concentration of the land and other wealth has been held by a small and closed elite. A peasant uprising in 1932 was violently repressed by the Government, with the Army executing more than 30,000 peasants. Repression and executions continued after the initial uprising had ended, serving as an effective warning to the peasants. Relative calm reigned for more than four decades before the seeds of violent revolution began to grow again in earnest.

Army officers ran the government of El Salvador from 1932 to 1980, and their election to the Presidency was seldom free or fair. In 1977, a reformist non-military candidate for the Presidency was widely believed to have been denied electoral victory. Because of the accumulation of grievances and a loss of belief that reform could result from the political system, several groups capitalized on the discontent and began guerrilla warfare in 1979. This warfare would continue until peace accords were signed in January 1992.

During the early 1980's, the internal warfare and a global recession, which reduced prices for El Salvador's principal agricultural crops (coffee, cotton and sugar), had a devastating effect on the economy. Between 1980 and 1985, real Gross Domestic Product fell by 25 percent. Over 500,000 persons were displaced from their rural homes, and hundreds of thousands more migrated to other countries. Schools, health facilities and municipal centers were destroyed. Dams, power lines, water supplies and railroads were attacked and routinely damaged by the guerrillas. Over the course of the first four years of fighting, every major bridge in the country was sabotaged. Many foreign investors left, numerous domestic businesses closed their doors, and massive capital flight took place.

During the thirteen years of the civil war, between 60,000 and 80,000 persons lost their lives, and between 750,000 and a million persons emigrated to other countries, principally the United States. The cost of replacing or repairing war-damaged infrastructure was estimated at $1.3 billion.

An October 1986 earthquake added to the already overwhelming infrastructure problems of the country, with destruction and damages estimated at $1.1 billion in the metropolitan San Salvador area, including 60,000 dwellings (largely in urban slums), 185 kilometers of water and sewage pipes, and 2,500 hospital rooms.

Against this backdrop of violence, destruction and economic contraction, the U.S. Government made the decision in the early 1980s to assist the GOES. The alternative was the possibility of a second communist country in Central America, Nicaragua, then being in Sandinista hands. From 1980 to 1991, El Salvador received approximately $3.1 billion in economic assistance.

To avoid further deterioration of social and economic conditions, an early USAID response was to work on the problem of maintaining and restoring public services affected by the violence. The Public Services Restoration Project (519-0279) was initiated in early 1981, signed in November 1981, and scheduled to run until September 1990.

The repair and restoration of the country's economic infrastructure required that each of the GOES major public services agencies establish a quick response capability to maintain services, as attacks were frequent. (Between 1979 and 1990, 3,241 attacks were made on high-tension electric towers, and 110 bridges were damaged or destroyed.) Typically this meant having specialized personnel trained for rapid response and having tools, equipment and replacement parts readily available. The latter also required a capability for rapid international procurement of specialized equipment not available in-country.

The Public Services Restoration Project financed the technical advice, training, tools and equipment, replacement parts, helicopter transport services, and other services needed to develop and sustain such quick-response capability. Over the life of Project 519-0279, USAID expended $111.6 million, primarily for ed tools and equipment. The GOES provided an estimated $81.3 million, largely through in-kind contributions and Host Country Owned Local Currency (HCOLC), for local repair costs.

The Public Services Improvement Project 519-0320 currently under consideration is a follow-on to Project 519-0279. However, as explained in the following section, it contains developmental interventions which were not included in Project 519-0279. It also introduced Host Country Contracting for construction with U.S. dollars. Both of these changes would increase the complexity of the Project's implementation in comparison to that of Project 519-0279.

One additional comment on the Project's setting may be helpful. The Project literally had a "baptism under fire", when three months after the Project Agreement was signed, the guerrillas launched an armed attack ("final offensive") against San Salvador. While the attack failed, it caused the temporary evacuation of many USAID employees, some of whom never returned. Both the physical and psychological disruptions had a lasting impact on the initial phase of the Project.

II. SUMMARY PROJECT DESCRIPTION

The Public Services Improvement Project (519-0320) was authorized on August 4, 1989 in the midst of the ongoing civil conflict and economic stagnation. Damage to the country's infrastructure, as well as a lack of expansion and the failure to perform adequate maintenance, had greatly reduced the availability of public services, especially in rural areas, and was contributing to poor health status and reduced economic productivity. Against this backdrop, a Project Grant Agreement with the GOES was signed on August 30, 1989 for a $75 million USAID contribution and a $60 million equivalent GOES counterpart contribution, i.e., a $135 million project.

The goals of the Project were (1) to provide for economic stabilization and growth and (2) to assure broad participation in the benefits of growth with an emphasis on improving the health of the rural population, especially children. In 1992, during the USAID/El Salvador Mission's strategic planning process, USAID placed the Project under Strategic Objective Number 1, "Assist El Salvador to make the transition from war to peace" (75% of Project's funds), and Strategic Objective Number 4, "Improved quality of life with equity in health and education" (25% of Project's funds). The purposes of the Project were:

- To restore and preserve vital public services provided by the infrastructure agencies;
- To improve and sustain the access of rural populations to markets; and
- To increase access of the rural populations to potable water supply and sanitation systems and to increase the proper use of water and sanitation systems in beneficiary families.

As a result of the formal signing of the Peace Accords on January 16, 1992, Project Grant Amendment No. 7 was executed on September 7, 1992. The Project's purpose was amended to include:

- To support GOES efforts under the National Reconstruction Plan by intensifying maintenance and repair programs on public physical infrastructure, and increasing access to services. (Component V below was added at that time to support this addition to the Project's goals.)

With the addition of Grant Amendment No. 7, the Project consisted of the following five components:

<u>Component I - Public Services Restoration</u> - This Component was designed to provide the financial support, principally foreign exchange for ed goods and services, needed by the public services agencies to repair direct and indirect damage caused by guerrilla actions during the war.

The implementing agencies are the National Water and Sewer Authority (ANDA), the Lempa River Hydroelectric Authority (CEL), the Autonomous Port Authority (CEPA), and the Ministry of Public Works (MOP). The current budget level (USAID and GOES contributions) for this Component is $27.5 million, compared with $36.5 million in 1989.

Component II - Rural Roads Maintenance and Repair - This Component was designed to finance the major effort of repairing secondary, tertiary, Rural "A" and Rural "B" roads (other than the primary national highways) which deteriorated due to financial constraints. Together with Institutional Strengthening objective of Component IV, this Component also sought to enhance the capability of the Ministry of Public Works (MOP) to plan and manage road maintenance through the efforts of two of its dependencies, the General Directorate of Highways (DGC) and the Administration for Machinery and Equipment (AME). Prior to the 1992 Peace Accords, road rehabilitation activities under this Component were confined primarily to the non-conflict areas of the country. As a direct result of the Peace Accords, roads also have been rehabilitated in ex-conflictive zones as part of the immediate response phase of USAID's Peace and National Recovery Program (519-0394) which supports the GOES National Reconstruction Program (NRP). The current Component budget level (USAID and GOES contributions) is $39.4 million, compared with $34.7 million in 1989.

Component III - Water Supply, Sanitation, and Health - This Component was designed to increase the access to potable water and sanitation services in small towns (defined as having populations less than 2,000) through the restoration or installation of water supply/distribution systems and sanitation systems in association with community organization and health education activities. The primary implementing agencies were ANDA for water supply and sanitation (WS&S) systems and the Ministry of Health (MOH) for health education and community organization activities. In mid-1993, the participation of several U.S. PVOs/NGOs was secured to implement WS&S and health education activities. The current Component budget level (USAID and GOES contributions) is $21.4 million, compared with $30.1 million in 1989.

Component IV - Institution Strengthening, Project Support, Monitoring and Evaluation and Contingencies - This Component was designed to finance technical assistance, training and commodity support to enhance the capability (planning and management skills, financial management, management information systems, and competitive procurement and contracting) of Project implementing agencies, to provide for USAID management of the Project, to promote a policy dialogue agenda, and to perform evaluations and audits. The current Component budget level (USAID and GOES contributions) is $10.6 million, compared with $12.4 million in 1989.

Component V - Post War Maintenance, Repair and Reconstruction This Component was added in September 1992 to provide direct support to the post-war GOES National Reconstruction Program, which is receiving support from USAID Project 519-0394. In effect, this Component is similar to elements of Components II and III, with funds for CEL (rehabilitation of distribution and sub-transmission systems, and procurement of related commodities), CEPA (rail line and related bridges rehabilitation, and commodities for rolling stock and facilities), MOP (rural road rehabilitation), and Municipalities and U.S. PVOs/NGOs (WS&S promotion, design and

construction, and health education and training). The primary difference is that this Component is targeted exclusively on the ex-conflictive zones. The current Component budget level (USAID and GOES contributions) is $23.8 million.

Project 519-0320 had a Project Assistance Completion Date (PACD) of September 30, 1994. The PACD was amended to March 31, 1995 for selected activities of Components I, II, IV and V, and Components III and V now have an end date of September 30, 1996 for Municipal WS&S, PVO/NGO WS&S, and health interventions.

Originally a $135 million program (USAID $75 million and GOES $60 million), Project 519-0320 now has a final budget of $123.8 million (USAID $67.9 million and GOES $55.9 million). As of November 1994, the Project has accrued expenses of $105.2 million; USAID $55.9 million and the GOES $49.3 million (The Project's financial inputs can be found in Annex E.)

III. PROJECT IMPLEMENTATION AND ACHIEVEMENTS OF TERMINATING ACTIVITIES

A. Component I - Public Services Restoration

1. Component Description

This Component was to provide financial support, principally through foreign exchange, to the public services agencies (CEL, MOP, ANDA and CEPA) for the repair of direct and indirect damage caused by the war, and if required, by natural disaster. The Component continued restoration assistance previously provided within the Public Services Restoration Project (519-0279), under which these implementing agencies had demonstrated the capacity to utilize resources effectively.

The actual rate of expenditures and the sub-sectors in which expenditures would be required were not easily predicted initially, as the function of the Component was to react to outside forces over which there was no control. For lack of a better method, it was assumed that the damages during the early life of the Project would be roughly the same as in later periods. It was also assumed that the primary targets would be the electric power grid and the railroad as in the past (i.e., CEL and CEPA), with lesser damage to infrastructure in other sectors. It was further assumed that the number of yearly incidents causing damage, and the amount of damage, would decline slowly over the life of the Project (LOP).

During the civil war, the electric power grid was being sabotaged several times each week by the cutting of transmission lines and by blasting towers, poles, and transformers. The railroad was attacked by dynamiting locomotives and track, although passive defense measures had decreased the damage of individual attacks. Most damage to ANDA equipment was actually caused by the attacks on the power grid, which resulted in burned out motors, switch gear and valves, and damaged pumps. As most bridges had been destroyed and replaced with temporary structures (e.g., Bailey bridges), they were now being attacked less often due to their replaceability and the improved security.

In addition to the importation of commodities, this Component was to fund helicopter services for use primarily by CEL in the repair of electrical transmission lines and towers. The Component also provided GOES local currency for the installation of imported commodities in ANDA and CEPA. (This was necessary because the tariff structures and levels of collections were too low to generate revenue to cover these installation costs. In theory, CEL installation costs were to be paid by electric utility revenues, and MOP installation costs were to be paid from the annual budget.)

A comparison of the projected and actual budget for Component I is shown in Table III-1, below.

Table III-1

Projected and Actual Budget for Component I

IMPLEMENTING AGENCY	IN MILLIONS OF DOLLARS EQUIVALENT					
	PROJECT PAPER			ACTUAL		
	USAID	GOES	TOTAL	USAID	GOES	TOTAL
CEL	$17.84	$ .23	$18.07	$16.68	$ .28	$16.96
MOP AME, DGC	1.15	-0-	1.15	1.05	0.54	1.59
ANDA	2.70	6.05	8.75	2.05	0.47	2.52
CEPA RAILROAD, AIRPORT, ACAJUTLA PORT	2.03	6.46	8.49	3.28	3.18	6.46
TOTAL	$23.72	$12.74	$36.46	$23.06	$4.47	$27.53

Outputs for Component I were not specified in quantitative terms in the Project Paper because the use of commodities by the implementing agencies was to be primarily in reaction to destructive acts of others. The expected output was continuity of service with minimum interruption, a goal which was achieved in the non-conflict areas.

2. Component's Implementation History and Achievements

a. Role of USAID

Under Component I, USAID served as a financing agent for Host Country Contracts awarded by the implementing authorities, and as the contracting agent for USAID direct procurement. The largest direct procurement was for the helicopter services which made it possible for CEL to ferry crews and materials to sites of sabotage. USAID maintained the right of approval on all contract documents, procedures and awards, and monitored the receipt, warehousing and use of commodities. At the outset of the Project, USAID had commodity procurement and management teams in place in most of the agencies as a result of work under Project 519-0279. The USAID Project Manager, who handled the procurement process as well as various other duties, performed well. After arrival

of the TA team, USAID required that the team review technical specifications for selected ANDA, MOP and CEPA host country procurements prior to USAID approval.

b. Appropriateness and Effectiveness of Implementing Agencies

Under Component I, the implementing agencies selected in the various sectors were the natural and necessary choices because they were (and still are) the national agencies charged with providing services in those sectors. In retrospect, it may have been beneficial to provide some water system commodities directly to municipalities who own and operate their own systems, in part because a GOES agency through which such assistance could be channeled had not been identified at that time. It was assumed that municipal systems would be included under the ANDA sub-component, but in the end, only water systems owned and operated by ANDA benefited (municipalities only benefited when U.S. PVOs/NGOs and municipalities replaced ANDA as primary implementing agencies later in Components III and V). Review of ANDA's actions suggests that they exhibited minimum concern for any system, urban or rural, which was not already owned and controlled by ANDA.

With the exception of the non-ANDA water systems, as noted above, all of the agencies performed well and accomplished what was intended of them in terms of restoring the services of war-damaged facilities. The railroad organization, and individual crewmen in particular, performed heroically under very difficult conditions. The CEL effort, recognizing the wartime conditions, also was very commendable and effective.

c. Appropriateness and Quality of Inputs

The bulk of the commodities which were purchased to restore service were proper and of acceptable quality. The services provided by the operators of the helicopter leases were of high quality, and the pilots are singled out here for recognition as having performed well under difficult and hazardous, and often hostile, conditions. However, these expensive helicopter services continued after their wartime justification had ended, and instructions for their discontinuation were issued by the USAID Mission (IRD and the Contracts Office argued against continuation, and CEL had stated in writing that the services were no longer needed.)

d. Effects of Commodity Management on Implementation

Commodity management was adequate to ensure that the primary objective of the Component, the restoration of public services, was achieved. Warehousing/inventory control was a problem in all of the agencies, and TA was provided under Component IV to overcome this difficulty in several of the agencies. The ANDA and AME organizations were the worst offenders, according to the TA contractor and two separate studies of warehousing practices of all the agencies. AME had inventory management problems in the early stages of the Project, but with new management beginning in early 1992 and with technical assistance from the Component IV contractor, they made admirable progress. The current inventory management system and controls at AME are at least as good as many, if not most, public agencies in the U.S.

The AME span of influence at this time is nation-wide. The success or failure of all road maintenance and a substantial amount of construction depends on the success of AME. AME currently is responsible for maintenance of 1,054 units of transportation and construction equipment, manufactured by 66 different firms from at least four countries (U.S., Japan, Italy and Mexico). The equipment is physically located in all 14 Departments of the country, and operated by the DGC (the largest user), the Directorate for Urbanization and Architecture (DUA), AME and Central MOP. The equipment is used for maintenance, construction, engineering, inspection and supervision.

AME at this time is a healthy organization trying to solve such problems as remain and is deserving of encouragement and support. In particular, it should be provided with the special tools and spare parts it needs to support the USAID-funded part of the construction/ transportation fleet. With this assistance, AME would be able to support maintenance of USAID-funded roads rehabilitated under the Project and, where applicable, roads funded under the MEA program and Project 519-0394, National Peace and Recovery.

While a similar TA effort was provided to ANDA, improvement in ANDA's commodity management was not satisfactory (see the discussion of Component IV).

e. Effectiveness of Institutional Strengthening on Implementation

Component I did not have institutional strengthening as a specific purpose or objective, but it is expected that some "learning by doing" should occur. The effect was not as great as in other Components, where training and institutional development were critical to Project success. As noted above, however, the TA provided to AME since early 1992 has been effective and the results noticeable.

f. Major Implementation Impediments and Related Adjustments

The engineering/technical aspects of restoring services using Component I commodities were fundamentally simple and straight-forward. Work in some sectors was more dangerous and/or difficult than others, but the technical aspects were seldom a problem.

Inventory management in AME requires the control and use of thousands of spare parts. As noted above, this was the weakest inventory management system under Component I early in the Project and, therefore, an implementation impediment. However, with technical assistance, the problem was significantly reduced over time.

One hundred and sixty-five separate commodity procurement actions were completed under this Component with only six defaults or cancellation for cause (usually because of attempts by vendors to supply goods of non-U.S. origin or to ship in non-U.S. ships). No outstanding claims are reported.

g. Mid-course Changes in Implementation

The commodity procurement function in support of service restoration operated as planned. With the end of hostilities in early 1992, Component I, together with the rest of the Project, was re-directed to support the Peace and National Recovery Program. Component V was added to the Project in September 1992 to focus on post-war reconstruction. Some commodities originally purchased under Component I were directed to the cause of post-war reconstruction, and additional commodities were purchased for this purpose under Component V. Commodity purchases under Component I have also continued for the general repair/replacement operations of the implementing agencies. Indirect damages of the civil war continue to require attention for several reasons, as presented below.

At the end of the civil war, considerable work remained to be done to return facilities to a permanent peacetime configuration and to restore service in ex-conflictive zones previously not accessible; this work was now feasible because service was no longer being interrupted by sabotage. Numerous electric distribution lines, sub-stations and transformers remained to be re-built or rehabilitated, especially in the ex-conflictive zones. A few thousand kilometers of rural roads remained in extremely poor or impassable condition. The railroad tracks and locomotives which had survived the war were wearing out or were in poor condition due to war damage. Existing water systems in many areas were operable but inadequate; others, in ex-conflictive zones, were completely inoperable. Many hundreds of thousands of persons in rural areas did not have reasonable access to safe and dependable potable water supplies.

h. Related Other Donor Assistance

During the life of the Project, some of the agencies received commodity assistance, primarily equipment and spare parts, from Germany and Japan. The following items have been identified:

AGENCY	DONOR	CONTRIBUTION
CEPA PORT OF ACAJUTLA	GERMANY	TWO STRADDLE CARRIERS TO HANDLE CONTAINERS. SIX TERMINAL TRACTORS FOUR TOWING TRACTORS PARTS AND TOOLS TO MAINTAIN THE EQUIPMENT FOR TWO YEARS
PORT OF ACAJUTLA	JAPAN	EIGHTY-THREE PIECES OF FREIGHT AND WEIGHT HANDLING EQUIPMENT, TRACTORS, LOADERS, ETC.
MOP DGC	JAPAN	SEVENTY PIECES OF CONSTRUCTION EQUIPMENT, VEHICLES, AND TOOLS. TRUCKS, MOTOR GRADERS, TRACTORS, ETC.

3. Component I Projected vs. Actual End of Project Status

There were no specific EOPS indicators established for Component I because of the nature of the problem it was designed to solve; that is, to react to externally caused, hopefully temporary incidents of unpredictable number and scope. Component I must be considered a success in that it assisted the restoration of all critical services in the public service sectors in accessible areas whenever they were interrupted, with the exception of non-ANDA water systems noted earlier. Such commodities as remain are contributing to the country's economic growth and social stability by rebuilding facilities both in the ex-conflictive zones and in other parts of El Salvador.

4. Validity of Project's Original Design and Assumptions as They Relate to Component I

The assumption, implicit if not otherwise, that the various agencies would do the necessary work to procure and manage commodities and to restore services was valid, except in the case of ANDA. Inventory management performance has not been as effective in this agency as in others. Some agencies required TA under Component IV in the preparation of specifications and bidding documents.

The number of sabotage incidents against the electric power systems and the railroad actually increased for several months in the early part of the Project. The November 1989 FMLN offensive was particularly disruptive. Otherwise the assumptions about likely damage and the resultant workload were valid.

5. Recommendations to USAID and/or the Host Government

- Vertical timbers should be added to Pier "B" at Acajutla as soon as possible, as parts of the pier are already in service. One estimate for repair of the system has been placed at $525,000. This should be confirmed/revised prior to funding.

- There is a serious deficiency in the design of the pier protection system at Pier "B" which, unless corrected, could lead to destruction of part of the system funded by this Project. The basic design is sound, but vertical timbers were left off the face of the fender system. These are timbers a vessel would come in contact with while tied up at the pier. As it is now, the horizontal structure of a ship, such as the bumper (rub rail) or the ship's gunwale, could lodge under the exposed horizontal timbers (walers) and tear them and the energy absorbing rubber blocks off the pier.

- The energy absorbing rubber blocks themselves also are failing for currently unknown reasons. These failures are already under investigation but are noted here for record purposes.

  (See also Recommendation d. of Component II with regard to AME.)

B. Component II - Rural Roads Deferred Maintenance and Repair

1. Component Description

This component was designed to (1) finance a major effort in the repair rural roads, other than the primary national highways, which had deteriorated due to financial constraints, and (2) together with Institutional Strengthening in Component IV, manage regular road maintenance. The equipment maintenance system (the AME shops and organization) were to receive support for the purpose of maintaining AID-purchased equipment required to implement the Project.

The implementing Ministry responsible for Component II was MOP through two of its units, AME for equipment and the DGC-MU for roads. Each of these divisions was to receive TA under Component IV of this Project. Each was to prepare its own Action Plan and would be responsible for implementing the Plan, which included responsibility for expending and accounting for all funds and other resources allocated under the Project.

The Road Management Unit - Road maintenance activity was to begin with the organization and staffing of a Management Unit (MU) in the DGC upon arrival of the TA team early in Project implementation. It was to be established in the DGC organization at the level of the Head of Operations, reporting directly to the Director General of Highways. The MU was to work closely with the Head of Operations in planning, selecting, engineering and executing sub-projects.

Road maintenance was to be performed on discrete segments of the road network throughout the country. Each segment was to be designated a sub-project with individual records. Sub-projects were to be selected based on economic and technical criteria. During the life of the Project, DGC was to repair/rehabilitate 1,600 kilometers of secondary road, or 320 kilometers per year.

Sub-project design and implementation procedures were to encourage the use of labor intensive construction techniques, especially in remote areas, in order to provide maximum employment opportunities and to avoid mobilization of large heavy equipment fleets. Engineering work was to be by contract or by DGC staff, depending on the complexity of the design, the availability of standard drawings and specifications, and the backlog of design work. The decision as to the method of execution was to be determined by the DGC. The determination as to whether to perform construction work by contract or by force account would be made in the same way, except that the Director of AME would be consulted in the planning stage.

In identifying the need for sub-projects, the DGC was to solicit requests from mayors and other appropriate officials at the local level, and from agricultural and industrial productive enterprises or programs. Tentative sub-project selection was to be made by the MOP with input from DGC personnel in the field. Final selection was to be made by the MOP, with USAID concurrence, based on consideration of the applicable selection criteria.

The DGC was to prepare, or ensure the preparation of, standard organization, operations, and procedures manuals in the fields of accounting, personnel, management information systems,

contracting format and procedures, and procurement with the help of the TA team. MU practices and procedures were to be in accord with the manuals. (TA and institutionalization are evaluated under Component IV.)

During the course of Project implementation, the DGC and the TA team were to identify needs for short-term training and select qualified personnel from the DGC organization to go abroad for training in management. Candidates were to be mid-level professionals, sub-professionals and technicians. Tentative training areas were project management, data processing, accounting and auditing. Other needs were to be identified as the Project evolved. A detailed training plan was to be included in each year's Action Plan. (Training is evaluated under Component IV.)

DGC-MU personnel were to spend time in the field both for planning sub-projects and for organizing, mobilizing, expediting and inspecting the work. They were to work closely with local officials to assure conformity with local wishes in so far as possible and to make the best use of local manpower and resources.

The DGC, with the help of the TA team, was to devise and utilize quality control, inspection, and testing systems commensurate with the level, size, cost and complexity of the work.

Light vehicles were to be provided under the Project to assure mobility of MU personnel and the TA team. Other proposed inputs to the DGC were light equipment, construction materials, salaries, and engineering and construction contracts.

Logistical Support for AME - At Project inception, AME was servicing approximately 310 vehicles and pieces of construction equipment originally financed by AID. During the Project, AME was to gradually assume responsibility for the maintenance of the majority of the heavy equipment fleets of DUA and DGC (both are subdivisions of MOP), as both the DUA and DGC maintained their fleets poorly. In addition, the unified and streamlined AME service gradually was to be regionalized to cover the Western and Eastern zones.

Inputs to AME were to consist of maintenance equipment, materials and tools for the AME repair shops; construction, rental, or purchase of new shops in regions outside San Salvador in order to expand the AME system; and staff salaries.

A comparison of the projected and actual budget for Component II is shown in Table III-2 below.

TABLE III-2
Projected and Actual Funding for Component II

FUNDING CATEGORIES	IN MILLIONS OF DOLLARS EQUIVALENT					
	PROJECT PAPER			ACTUAL		
	USAID	GOES	TOTAL	USAID	GOES	TOTAL
COMMODITIES	$ 4.30	--	$ 4.30	$ 4.27	--	$ 4.27
SERVICES, INCLUDING CONSTRUCTION	--	30.41	30.41	3.86	31.32	35.18
TOTAL	$ 4.30	$30.41	$34.71	$ 8.13	$31.32	$39.45

Source: DGC Report

A comparison of the projected, actual and planned outputs for Component II are shown in Table III-3 below.

TABLE III-3
Projected, Actual and Planned Outputs for Components II

OUTPUTS	PROJECT PAPER	ACTUAL AS OF 9-30-94	PLANNED AS OF 3-31-95
KILOMETERS OF ROAD REPAIRED	1,000*	760	788*
MAINTENANCE, CONTROL AND OPERATION OF CONSTRUCTION EQUIPMENT AND VEHICLES	NOT LESS THAN 310 UNITS EQUIPMENT AVAILABILITY INCREASES AND EQUIPMENT DOWN TIME DECREASES ANNUALLY	297 UNITS MAINTAINED DOWNTIME AVERAGE OF 40% OF EQUIPMENT, I.E., 60% AVAILABILITY	NO CHANGE EXPECTED UNTIL A BETTER PROCURE-MENT SYSTEM FOR REPAIR PARTS IS INSTITUTED

Source: DGC Report

* Six hundred kilometers of the original target of 1,600 kilometers were re-scheduled to Component V and targeted for the ex-conflictive zones per Amendment No. 7 to the Project Agreement, dated 7 September 1992. The modified target for Component II was then 1,000 kilometers.

2. Implementation History and Achievements of Component II

A primary objective of Component II was to award and implement private construction contracts, which was preferred over force account construction. According to USAID specifications in the Project Paper, several organizational and staffing actions were required before actual contract preparation and award could begin:

(a) Organizing, training and equipping of the MU,

(b) Hiring a senior PSC engineer in USAID to act as Project Manager,

(c) Awarding and staffing of the TA contract upon whose performance much of the success of the Project would depend,

(d) Preparing and approving an Action Plan for the first year of the Project,

(e) Preparing contract documents and plans, and

(f) Accepting the Management Unit as capable of awarding host country contracts in accordance with USAID requirements.

The completion of these steps required a long mobilization and training period, consuming 29 of the 60 months of Project time before the first construction by contract began. Approximately one year of this time elapsed between approval of the Project Paper and award of the TA Contract. In the interim, before the MU was prepared to award contracts, the DGC undertook rehabilitation of 113 kilometers of road by force account.

Instructions for bids were issued for the first construction contract by the private sector in July 1991, awarded December 13, and the Notice to Proceed given on 14 February 1992. Later in 1992, dollar funds had to be used to finance construction contracts, instead of HCOLC, and USAID's Host Country Contracting processes had to be utilized. They had been used before only for offshore commodity procurement. There was some resistance within the DGC to the new contracting procedures and about six more months were lost before the processes were working smoothly again.

The cost of the work done by force account by DGC was ¢13,615,536, or approximately $27,000 per kilometer at the Project exchange rate of 5:1, far above the $10,000 per kilometer estimated in the Project Paper. When the first construction contract was awarded in December 1991 at a cost of approximately $24,000 per kilometer, it was apparent that the cost of the work would exceed estimates and the total of 1,600 kilometers probably could not be achieved within the existing budget.

In retrospect, the low cost estimate in the Project Paper can be attributed to a number of factors:

- Lack of recent cost experience for similar work in El Salvador because of the war;
- The estimates were made without travel to the sites, but from maps and second hand reports, because travel to much of the countryside was not secure; and

- Inflation (e.g.,the exchange rate went from the 5 to 1 established for the Project to 8.70 to 1 by the time construction started, a change of almost 75%).

In any event, funds originally programmed for roads were not sufficient to complete the total number of sub-projects contemplated when the Project was designed. In theory, the contingency funds included in the Project might have been used to overcome the deficiency, but the MU and contractors were working at capacity by the time they became productive. Both time and money ran out on them before they could complete the 1,600 kilometers.

The period between the staffing of the TA contract and the award of the first construction contract also saw a considerable amount of personnel turnover. This occurred in the USAID office managing the Project, in the DGC, and in the staffing of the TA contractor, e.g., three Chiefs of Party in the first twenty-five months of the contract.

A new Deputy Director of USAID/IRD reported for duty in late 1990, and he quickly instituted several personnel reassignments and a reorganization of IRD. These changes negatively impacted the USAID Project organization for several months. With his departure in the spring of 1992, this Component has made better and more steady progress.

The DGC Management Unit began with personnel who had no computer training or knowledge. The contract and financial management systems to be installed would require use of personal computers. The machines were purchased and training was provided by the specialist from the TA team. The MU now is a smoothly functioning unit, with capability to handle additional work with reduced staff. It now includes properly equipped soils technicians, as well as computer operators, engineers, superintendents, inspectors and support personnel.

However, turnover of personnel has been high because the skills the individuals acquired in the Project training programs are highly marketable in the private sector. The incumbent MU manager is the fifth manager of the Unit. To the credit of both the trainers and the trainees, most of the MU personnel were capable and willing. The MU now has smoothly functioning computerized records and management systems. From a high of 60 employees, the MU staffing level is now 35 positions. This staff will manage the major construction components of the Peace and National Recovery Program.

The most recent manager of the MU has been assigned to manage much larger road programs under funding from the Inter-American Development Bank (IDB) and the Central American Bank for Economic Integration (CABEI). It is hoped that he will use the techniques developed under this Project.

The quantity of roads completed by local contractors under Component II are shown in Table III-4 below. The breakdown of DGC force account and private sector construction within Component II is shown in Table III-5 below.

A computerized road and highways management system, called the Administration of Road Maintenance System [Sistema de Administración del Mantenimiento Vial (SIAMV)], was developed by the TA contractor for use by the DGC. The system in based on an inventory of all the elements (shoulders, drainage ditches, rights-of-way, pavements, etc.) which compose a road and highway system. If this inventory is kept up to date and conditions of the various elements are entered into the program regularly along with the unit costs for various levels of maintenance of each element, a total maintenance funding requirement can be developed. The program can then be used to allocate the funds actually available to the highest priority elements, thus keeping the total network in the best possible condition with the funds available. Records of field operations and actual costs are utilized to keep the program current.

The SIAMV should be used in its entirety to budget for and to manage the execution of road maintenance on the entire national (as opposed to municipality) network. At minimum, the planning and budgeting part of the program should be used regularly.

Use of the program can contribute to the sustainability of the road and highway system by calculating accurately the cost of proper road maintenance. The budget requirements generated by the SIAMV will demonstrate clearly the historic inadequacy of maintenance funding and present a strong argument for the need for adequate funding in order to protect the existing investment in roads.

SIAMV is currently expanded into the rest of the national network. The GOES signed a contract with the same TA contractor to perform the work within this extension. This contract (not funded by USAID) is clear evidence that the GOES appreciates this system and intends to continue to utilize it. This contract also speaks well for the long-term sustainability of this aspect of the Project.

Table III-4
Roads Repaired by Local Contractors

YEAR OF CONTRACT AWARD	ACTUAL TO 9-30-94	PLANNED TO 3-31-95
	LENGTH IN KILOMETERS	
1991	--	71
1992	283	302
1993	204	125
1994	159	178
TOTALS	**646**	**676**

Table III-5 Force Account and Private Sector Construction under Component II			
OUTPUT	PROJECT PAPER	TO 9-30-94	TO 3-31-95
ROADS BY PRIVATE CONTRACTOR		646.66 KMS.	675.66 KMS.
ROADS BY DGC FORCE ACCOUNT		112.86 KMS.	112.86 KMS.
TOTAL ROADS*	1,000 KMS.	759.52 KMS.	788.52 KMS.

Source: Internal USAID Documents.

* Six hundred kilometers of roads were assigned to Component V and are shown in the discussion of that Component.

Additional roadwork completed in 1993 and 1994 is shown under Component V. A total of 7,890 kilometers of tertiary, Rural "A" and Rural "B" roads have been inventoried in El Salvador, and most are in either poor condition or impassable. Thus, Component II has addressed approximately 10 percent of the repairs, with Component V addressing about 5 percent more.

Equipment for AME - The AME has developed into the MOP central manager and maintainer of vehicles and construction equipment. All AME salaries are now funded by the GOES ordinary budget, which also funds the purchase of spare parts for vehicles and equipment beyond that purchased by USAID. However, AME is still dependent on parts and tools provided by USAID for support of equipment purchased with USAID funds, as it has a very limited budget for purchases and no budget for training. Through disposal actions, USAID financed equipment fleet has been reduced from 310 to 297 units.

AME is now operating three regional shops, in addition to the central shop in San Salvador, and is planning a fourth regional shop in San Vicente. The existing shops are in San Miguel (East), Santa Ana (West) and El Coro (Central-Paracentral). The AME regional shops are operating under experienced leaders and appear to be making a good effort to keep equipment and vehicles in operating condition. Under this Component, a new shop and office complex was built in Santa Ana. A similar, but not identical complex was planned for San Miguel, but was dropped from the Project, apparently because of aggressive objections by the employees union. The facility is badly needed and should be built when local conditions and financing permit.

According to reports in Santa Ana, San Miguel and San Salvador, the deadline rate for AME-maintained equipment is approximately 40%. That is, 60% of the inventory is in operating condition at any one time. This rate is attributed in part to low productivity of labor and in part to delays in receiving repair parts in the shops. The time required to obtain a part which is commercially available and in stock in El Salvador can run three to six months, according to oral reports, if the item costs more than ¢500. The procurement procedures of GOES clearly are not geared to efficient support of operations.

AME employs approximately 700 people. A management study would be in order to match staffing levels to workload. Oral reports suggest that the union is very strong in AME and productivity low. If changes were made, it is possible that the organization would have to evolve slowly and staff reductions would have to be by attrition.

In most countries, the central shops of public agencies prove to be ineffective for more than a relatively steady low level of minor repair and preventive maintenance, at least in comparison to contracting for major work in private shops. MOP should consider contracting out much of its more difficult maintenance.

a. The Role of USAID

USAID, through the Major Infrastructure Division (MID) of the Office of Infrastructure and Regional Development (IRD), served as the Project management office. Under the Chief of MID, who was a senior USAID PSC engineer (after August 1991), a Salvadoran FSN engineer acted as Project Manager for each implementing agency. A Project Manager for procurement coordinated and tracked all commodity procurement by USAID and the host country agents. Significant roles and actions by USAID are reported in the historical narrative above.

b. Appropriateness and Effectiveness of Implementing Agencies

Component II concerns roads which are part of the national network and are the legal responsibility of the DGC for construction and maintenance. MOP equipment for road construction and maintenance is maintained by AME. Therefore, the implementing agencies were the proper ones for the rural road component.

The use of an largely autonomous Management Unit in the DGC follows a common pattern in other GOES agencies and in other projects. The practice has advantages for resource control, but also a built-in delay for the start of project implementation because of the time involved in recruiting, equipping, training and organizing the MU. In addition, there is usually little chance of leaving a trained and functioning unit in place. In this case, however, the outcome was positive, as the methodologies developed in the Unit and many of the trained personnel are being retained for other programs or are being absorbed into other parts of DGC. The system did accomplish its primary purpose in so far as time permitted, and a number of well trained people were left in place for reassignment in the DGC. Further, this MU will continue temporarily, although reduced in size, to handle other projects as noted in the Section 2 Introduction above.

The use of private sector contractors to repair/rebuild roads proved sound. Once a pipeline of projects to be bid was established (after the unexpectedly long 29 month period of preparation), construction proceeded at an accelerating rate. The work performed was satisfactory to good for the purpose intended and a cadre of experienced road contractors now exists to undertake other work, such as projects under the Peace and National Recovery Program or projects now being prepared or being funded by the IDB and other development agencies. The roads inspected were good for their class of road. In one town high in the mountains, the complaint was heard that the road is so good that the accident rate is higher because of the speed the vehicles can now travel.

A very good indication of the effectiveness of an institution is whether or not it fulfills its primary functions, in this case, MOP/DGC maintenance of roads. Inspection of the rehabilitated roads under this Component show a great need for increased maintenance of all roads on a regular basis. Roads being completed in November and December 1994 are in excellent condition with good surfaces and what appears to be good drainage. Roads completed twelve to eighteen months earlier with Project funds show definite signs of surface erosion and the onset of drainage problems as ditches become plugged, cross drainage breaks down, and so forth. This is evidence that these roads are not being properly maintained.

From a purely economic standpoint, it could be argued that no new roads should be built until roads already in place are properly maintained. In other words, it is not economical to make new investments while existing investment is being lost and could be protected at less cost. However, this extreme position is not recommended now because of the great social injustice that would result for people living in areas where roads have been neglected for up to fifteen years. It is essential, however, that recent and ongoing investment be protected. This can be done only by a properly funded and executed maintenance program.

In performing maintenance, the long term economic and financial interests of the DGC and GOES are best met if most maintenance work is performed by contract. Two sets of numbers are of interest here; (1) as recently as 1991, 94% of DGC expenditures were for salaries, leaving only six percent for materials and other costs. This ratio has improved slightly in the last three years (reductions in personnel have been taking place slowly), but the salaries figure is still very high - 92 percent in the FY 1995 budget. (2) The SIAMV calculation of maintenance needs in 1993 was 545.6 million colons, with the DGC actually requesting 135 million, and the GOES approving 105.1 million colons: less than 20% of the demonstrated need. The budget approved for CY 1995 is still only 201.5 million.

The TA team worked hard to promote the idea of contracting road maintenance to private companies. An in-country seminar was held, and observation trips were arranged for DGC personnel to Honduras, Chile and Argentina. A pilot "maintenance by contract" program was initiated. (The SIAMV system provides a capability for budgeting for and managing an expanded road maintenance program.) The DGC established a Maintenance by Contract Office, but no contract has yet been let for maintenance other than the pilot program.

It is estimated that if private contracting is adopted as the preferred method for performing as much as possible of the road maintenance work, approximately 75% of the work could be done by contract after a transition phase of about five years. This time is required to develop and improve contracting practices, to develop the capability in the private sector to do the work, to reduce the DGC field labor force, and to adjust the skills mix in the DGC through training and personnel shifts (to change from directing large field forces to administering contracts). This cannot be done overnight, but a start should be made as soon as possible.

c. Appropriateness and Quality of Inputs

Commodities provided under Component II were adequate for the task. Contract documents, contracts and the quality of construction were good, after the routines had been learned in late 1991. Specifications of items purchased usually were prepared cooperatively by DGC, AME, USAID and the TA contractor, and were required and appropriate for Project work. AME has stated a need for additional tools and spare parts to shorten down time and keep a larger percentage of the equipment inventory operational.

d. Effect of Commodity Management on Implementation

Commodity management did not have a direct detrimental effect on actual road repair and reconstruction once the commodities were received. There were weaknesses in warehousing practices and end use monitoring discovered by two different investigations, and TA was provided successfully to AME to correct most of the deficiencies. However, the cost of the TA for AME might have been used for additional road work had it not been required there. Late delivery of commodities occasionally resulted in minor delays, according to oral reports, but in those cases the vendors at least paid a penalty or discounted their invoices to compensate in part for the delays.

Vehicles for the MU field personnel were not ordered until August 1990, creating a mobility problem for almost a year because movement of field personnel was restricted.

The TA provided to AME in inventory control and management has given that organization confidence, pride and growing competence. AME still needs specially tailored help with some of its computerized procedures, but institutional development has given it improved status in the eyes of MOP. In each of the last three years, the AME ordinary budget allocation has increased and more equipment has been assigned to it for maintenance. AME now maintains approximately 95% of the vehicles and equipment operated by MOP agencies.

e. Effectiveness of Institutional Strengthening on Implementation

Development of organizational and individual skills in the DGC-MU was accomplished by training and was a vital part of the implementation process. By 1992, the MU had become adept at construction management and has been able to deliver almost three years of steady progress on road repair and reconstruction. The effectiveness of some other DGC units also was enhanced (see the Component IV discussion below).

Another important institutional development occurred in the private sector. Only five or six contractors were able to compete for bids advertised in late 1991. At the height of the construction activity, 46 contractors had been certified as eligible, and 23 different contractors eventually built one or more sub-projects. There is now an experienced cadre of road contractors qualified to do maintenance or construction on the lower classes of rural roads.

f. Major Implementation Impediments and Related Adjustments

There were no major technical problems which delayed implementation. Problems were caused by: institutional deficiencies, personnel training requirements, the delays built into U.S. and Salvadoran funding mechanisms, the recruiting and contracting processes, and the unsettling effect of the major guerilla attack on San Salvador in late 1989. Specific examples include:

- The TA contractor did not furnish five of the eight personnel promised in their proposal. The team leader who was initially proposed came for only two months and departed as he had apparently planned. He was not even shown in the staffing history in the draft final report from the contractor.

- The TA contract was not staffed until September 1990, a year into the Project.

- The initial USAID Project staff of Salvadoran engineers and Project Managers was decimated starting in 1991 by separations, re-assignments and a subsequently reversed reorganization within IRD.

- Recruitment of a permanent USAID Project Manager/USAID PSC Engineer was not completed until August 1991, two years into the Project. Prior to this, the position had suffered two changes in incumbents (one lasted only three months) and long vacancies.

- A stable staff of USAID Project managers and engineers was finally available in mid-1992, half way through the Project. Appropriate attention was not paid to USAID staff recruitment and utilization.

- There were few private contractors qualified or interested in the work at the outset. This was partly because of a lack of experience, and partly because hostilities were in progress. Interest and the number of contractors increased quickly after the Peace Accords, and the rate of construction increased accordingly, as shown in Table III-4 above.

- In the early stages, before the arrival of Project vehicles, inspectors and superintendents of the DGC-MU were forced to share the very limited resources of DGC field crews to plan and inspect DGC force account work. The Project vehicles for the MU field forces were not under contract for procurement until August of 1990 with delivery in the fall of 1990. By the time construction contractors began to work in January 1992, the vehicle fleet of the MU was at full complement.

- In common with all projects involving local currency-funded Host Country Contracts (derived from U.S. dollar grants), this Project was a victim of pre-audit and approval delays routinely caused by the GOES Court of Accounts.

g. Mid Course Changes in Implementation

The initial implementation of Component II, i.e., repair of roads, was done by DGC force account. This was planned in the Project Paper for the initial phase, while the rest of the implementation apparatus was put in place. No new force account work was initiated after construction by contract began in February 1992.

The major programming change occurred when Project Agreement Amendment No. 7 was signed adding a fifth component to "provide access to services and to assist in performance of intensive maintenance and repair and reconstruction of public sector infrastructure in ex-conflictive zones."

In effect, Component V removed work from Component II, 600 kilometers of road, and directed it to post-war reconstruction in support of the NRP in ex-conflictive zones. The methodology and organizations implementing the selected sub-projects did not change. However, the funding source did change, because the execution of Amendment No. 7 to the ProAg provided U.S. dollars for road construction for the first time under the Project. This meant a shift from utilizing local currency procedures to USAID Host Country Contract procedures. Before work began under Component V, however, the private sector contractors, the MU and USAID project management comprised an experienced and smoothly functioning implementation mechanism.

3. Actual End of Project Status Compared to Project Paper Projections

EOPS indicators, planned and actual, are shown in Table III-6 below.

4. Validity of the Project's Original Design and Assumptions in Relation to Component II

The following assumptions shown in the Logical Framework in the Project Paper are germane to the success and sustainability of this Component.

Goals Assumption No. 2 - GOES policy will encourage rural development and the spreading of social and economic benefits among the rural population.

Visible signs of GOES policy in this regard are somewhat mixed. Certainly some progress is being made, although no work is underway on lower class national roads as yet, other than that funded by this Project and by the IDB. No central government interest is yet evident in the future of municipal roads, which are the legal responsibility of the municipalities. Probably none of these lower class roads will be maintained routinely until a percentage of the gasoline tax, as a road users fee, is dedicated to maintenance of the low level roads.

Component II Output Assumption No. 2 - Policy decisions will establish firmly the future role and status of AME, and the range of its responsibility.

The role of AME is more firmly established and its future, at least for the near term, apparently is understood. At present, it will function well if properly funded.

In the area of Project design, it is now apparent that not enough attention was paid to, or enough time allowed for, mobilization of the TA contractor, the USAID Project staff, and the Management Unit in the DGC.

The implicit assumption that the Director General of DGC would himself act as a role model and leader for the effort proved valid and should be noted.

Table III-6
EOPS Indicators
(From the Project Paper Logical Framework)

PURPOSE	INDICATORS	STATUS
IMPROVE AND SUSTAIN THE ACCESS OF RURAL POPULATIONS TO MARKETS	2% ANNUAL INCREASE IN THE LEVEL OF TRAFFIC (ADT) ON ROADS IN THE PROGRAM	TRAFFIC LEVELS APPEARS TO EXCEED ESTIMATE ON ROADS REPAIRED (NO MEASUREMENTS MADE)
	ANNUAL REDUCTION OF 1% IN UNIT TRANSPORTATION COST OF CARGO (COST PER KILOMETER)	FROM INSPECTIONS THIS REDUCTION MAY HAVE BEEN EXCEEDED (NO MEASUREMENTS MADE)
	AN INCREASE IN THE CAPABILITY OF MOP TO PLAN AND IMPLEMENT REPAIR AND MAINTENANCE OF SECONDARY, TERTIARY, AND RURAL "A" AND "B" ROADS (COMPUTER PROGRAM FOR MAINTENANCE MANAGEMENT (SIAMV) IS IN PLACE IN DGC. CONTRACTING EXPERTISE AVAILABLE FOR MAINTENANCE CONTRACTS)	CONTRACTING EXPERIENCE FROM PROJECT CAN AND SHOULD BE USED TO CONTRACT MAINTENANCE WORK COMPUTER PROGRAM FOR MAINTENANCE MANAGEMENT (SIAMV) IN PLACE IN DGC

Source: Internal USAID Documents.

5. Related Other Donor Assistance

The MOP, DGC and DUA are in process of reconstructing primary, secondary and lower class roads funded by loans from the IDB, CABEI and the Government of Japan. Two loan programs

Table III-7 Road Programs by Other Donors In Millions of Dollars Equivalent			
PROJECT	DONOR	LOANS	TOTAL PROJECT*
** TRUNK ROADS	IDB	120	185
** RURAL ROADS, UNPAVED	IDB	44	49
*** TRUNK, URBAN AND UNPAVED ROADS	IDB CABEI JAPAN	225 19 106	466

* Includes GOES funding for the program.
** In progress.
*** Being negotiated.

In addition, Japan will fund the construction of four kilometers of road and the reconstruction of the two major bridges over the Río Lempa ($100 million); five lesser bridges ($7.5 million), four along the littoral highway and one on the Pan American Highway; and the Torola river bridge on CA-7 in the Department of Morazan ($5.6 million).

The $49 million IDB project for unpaved roads is scheduled to rehabilitate approximately 430 kilometers at an average cost of about $114,000 per kilometer. Even when all overhead, supervision and engineering costs are included, this cost seems extremely high for roads similar to those repaired under Project No. 519-0320. The average Project cost raised by a factor of three would still be only 50% of the cost proposed under this loan. At these prices, it appears that these unpaved roads are being over-designed and over-built to such an extent that El Salvador will never be able to afford improvements to the approximately 8,000 kilometers of unpaved national roads plus 4,500 kilometers of Caminos vecinales (neighborhood or municipal roads).

A simpler technical approach which improves much more of the road network and provides a properly funded and organized maintenance program would better serve the rural population of El Salvador. Basic roads, once open for regular travel, can serve the people and be upgraded slowly over the years by maintenance forces. This methodology is still used in the U.S. where and when funds for upgrading rural roads are limited.

Compared to the IDB funded rural road program, the USAID-funded rural roads Component looks very good indeed.

6. Recommendations to USAID and/or the Host Government

The Machinery and Equipment Administration (AME)

(a) With relation to AME's financial problems (inadequate funds for spare parts, vehicles and training), USAID should consider the following actions:

(1) Restore some of the funds which were cut from AME's current Action Plan funding, especially for spare parts, specialized equipment and vehicles, and local training; and

(2) Propose to the MOP, and agree to fund, a special study on the options for AME development over the next five years, including the budgetary implications of each option. It is assumed that the study could be funded under the LBII contract.

(b) USAID should continue to implement short-term TA to work out the bugs in the fleet management part of the Consolidated Fleet Analysis System (CFA) in order to make it fully operational.

(c) The GOES needs to modernize procurement procedures for production shops and projects in order to save time and money and prevent unnecessary disruptions of work. As a bare minimum, the limit of the shop supervisors authority for purchases should be raised from ¢500 to ¢2,500.

(d) AME should develop procurement policies which reduce parts inventories to an irreducible minimum. This will require improvements of procurement mechanisms on the local economy from commercial sources, or allowances for rapid direct . This change will save time and money and is the trend of modern management systems, especially in manufacturing. To accomplish this task, a procurement system designed for minimum bureaucratic procedure and which relies heavily on post-audit controls must be adopted.

(e) The AME shop in San Miguel should be built as soon as conditions permit. In the meantime, the highest priority work spaces should be built without waiting for funding for the entire complex.

(f) A fax machine for the Santa Ana shop should be made available in order to expedite procurements, improve office management and reduce the time and cost of messenger trips between Santa Ana and San Salvador (this was not included when the last proposed AME Action Plan was partially approved).

(g) AME should investigate the feasibility of a cross-agency agreement with the railroad for unusual problems that might be profitably farmed out to the railroad shops. The railway shops of FENADESAL are highly competent in the manufacture and improvisation of parts.

Ministry of Public Works/Directorate General of Roads

(a) USAID should consider the following actions:

(1) Notify the GOES in writing of the special covenant in the ProAg which reads as follows: "The Government of El Salvador will provide, during the life of the project and after the Project is completed, budgetary support to MOP at a level adequate to continue the system of regular maintenance of roads."; and

(2) Request that the GOES increase funding for road maintenance, including the maintenance of the equipment needed for this work.

(b) The GOES should develop a policy and formula for distributing funds to the DGC and the municipalities for road maintenance and improvement of the lower classified roads. In other countries, such distributions are made from the gasoline tax, which is viewed as a road user charge. This "road users" tax is used for road maintenance in the same way that revenues collected from the sale of electric power is used to pay for and maintain the electric power system.

(c) The MOP/DGC should adopt as policy private contracting of road maintenance and begin to develop an approach for carrying this out (e.g. - a plan of action and a schedule for achieving a fully funded maintenance program with 75% of the field work performed by contract by the year 2000).

(d) The GOES needs to continue to try to interest foreign donors and lenders in the funding of reconstruction of tertiary and lower classes of rural road, in addition to the funding for national primary and secondary roads. However, design standards for rural roads should be lowered so that more roads can be constructed and/or improved.

(e) The contracting organization and processes developed in the DGC-MU should be continued for larger projects under the neighborhood road activities of Project No. 519-0394.

C. Component III - Water Supply, Sanitation and Health

1. Component Description

This Component was designed to restore or install water supply and sanitation systems in small rural communities, in association with community organization and health education activities.

One of the target groups to be addressed were communities with populations of approximately 400 or fewer; communities which had not been previously targeted by any agency or donor for potable water supply, sanitation (WS&S) and/or health projects. Over the life of the Project, approximately 900 simple water systems, such as wells with hand pumps or gravity fed systems, were to be constructed in communities where more sophisticated systems were neither financially nor

technically feasible. The private sector contractor hired to install these simple water systems was also to install a specific number of pit latrines. To the degree possible, with exception of the pits themselves (which were to be a labor contribution of the villagers), the private contractor was to utilize local-hire labor during installation of the water systems, and the latrines and their protective housings.

A second population to be served by the Project were communities of between 400 and 2,000 persons. Approximately 120 existing, small, rural water systems which were not functioning at their full or needed capacity were to be restored or expanded. The community organization, sanitation and health education activities were focused here as well.

All construction activities were to be preceded, accompanied and followed by community organization activities to foster sub-project sustainability, and by health education to foster the proper use of the WS&S facilities to improve the health status of the rural populations receiving the sub-projects. Where necessary, training in community organization was to be provided under the Project.

The selection of specific community level activities (sub-projects) was to be dependent upon the conformance of the proposed sub-project to selection criteria and the preparation of a sub-project implementation plan which was to provide, among other things, detailed information on the need for water and sanitary facilities and the accessibility of these facilities, qualitative health data, and information on community health practices. The selection criteria were to take into consideration: accessibility, community support, national priorities, related interventions, socio-economic return, other donor activities, relative financial cost, community need, related school programs, and community size.

Approximately 600,000 persons were to benefit directly from this Component. Community organization and participation, especially as reflected in local associations of water users, were pre-requisites for water supply and sanitation sub-project funding. Health education relating to water use and sanitation were to accompany the implementation of individual sub-projects, and local level sub-project implementation plans were to detail the relationship between WS&S and health prior to funds being released for construction.

Health education was to be delivered by health promoters from the Community Health Division of the Ministry of Health and by local health volunteer workers in the communities. The health promoters, with the help of Project-financed technical assistance, were to train rural health workers and adult village groups, such as Parent Groups (similar to a PTA) and local water users associations.

Health and hygiene were to be emphasized by teachers in community schools who would receive educational and promotional materials financed by the Project. These schools were to be targeted for water and sanitation systems/points, and the teachers were to receive training in their use.

Implementing Agencies

The primary implementing agencies for Component III were the Ministry of Health (MOH) and ANDA. The MOH was to be the implementing entity for the health education activities through its Community Health Division (MOH-CH), with appropriate inputs from the MOH Division of Health Education and Environmental Sanitation. The Management Unit of ANDA (ANDA-MU) was to be the implementing entity for the potable water and sanitation systems. The TA funded under Component IV of the Project, as described later, was to provide advice, support and coordination for the implementation activities, and to support inter-agency communication and coordination at the central level.

In order to implement the Project successfully, the functions and authority of ANDA needed to be both strengthened and decentralized. It was also necessary to formalize the working relationships between the ministries, agencies and communities, as detailed cooperation was needed for the implementation of the construction and health activities if they were to be a unified Project effort.

ANDA regional offices were to be strengthened and expanded through technical assistance, training, commodities purchases, and the addition of civil engineers, water promoters and maintenance personnel. The regional offices were to play a critical role in Project implementation, as ANDA water promoters were to be the direct linkage with the health promoters, the municipalities and cantons where the sub-projects were to be implemented. Also, the regional offices, through their civil engineers, were to approve the implementation plans for funding and supervise the work contracted to the private sector. The staff of the regional offices were to maintain regular contact with their MOH counterparts.

Based on the Action Plan requirements of ANDA and the MOH, the Salvadoran Municipal Development Institute (ISDEM) could be asked to provide a scope of work for, among other things, the training of municipal and community officials in organizing and registering their groups as corporate entities under the Municipal Code. ISDEM was also to carry out such training under a Project-financed contract.

At the community level, materials were to be made available by the health promoters (posters, pamphlets, and audio-visual aids, as appropriate) on the relationship of potable water supply and sanitation with health status. The water promoters were also to utilize similar materials to illustrate water supply and sanitation options to the water user committees.

Inter-Institutional Coordination and Component III Implementation

National Policy-Making Committee - The National Committee of Potable Water and Sanitation Institutions (CONIAPOS - established in 1981) or a similar committee was to be activated. The responsibility of this Committee was to give policy direction and guidance, to ensure individual agency compliance, and to assure the inter-institutional cooperation needed for the successful execution of the Project. The Committee also was to provide a useful forum to address potable water supply, sanitation and health policy reform issues.

Inter-Institutional Coordinating Committee - The Ministry of Health and ANDA were to enter into a Memorandum of Understanding (MOU) to ensure that the two organizations cooperated in jointly undertaking the water supply, sanitation and health education activities required to produce the desired results. This MOU was to authorize and direct the respective MOH and ANDA personnel at all levels to work together, (with the support and advice of TA), to outline the path for achievement of the Project purpose; and to establish a committee composed of (at least) the General Manager of the ANDA Management Unit and the Chief of the MOH Division of Community Health (MOH-CH). This committee also was to include representatives of other agencies or organizations participating in Project implementation. One or more of the Project-financed technical advisors and representatives of the USAID Project support group was also to attend these meetings.

Sub-Project Implementation Plans - With assistance from the regional offices of ANDA and the MOH, from the water and health promoters, and from representatives of the community water user associations, mayors and/or other municipal officials were to prepare sub-project implementation plans for their municipalities. These were to be based the sub-project implementation plans drafted at the village (canton) level. The municipal plans were to set out the specific activities, designs, costs, responsibilities and financing sources for municipal and village sub-projects for which Project funding was being requested. These plans also were to include environmental statements for the potable water and sanitation activities and key health status statistics and indicators.

Specific studies in the sub-project areas were needed to establish the base line from which a sub-project could be developed and evaluated. At the local level, these studies were to integrate the investigation of physical structures (water and latrines) with an investigation of health indicators, community organization and knowledge, and attitudes and behavior regarding water and sanitation use, diarrheal disease and so forth.

To develop this data base, the program was to use several methods. First, the WS&S program was to take advantage of the related research already planned by the MOH Community Health Division (MOH-CH) and financed by AID Project No. 519-0308, Health Systems Support (APSISA). Additional research or survey needs would be identified via meetings between ANDA, MOH, and the private sector. These additional needs were to be financed by the WS&S program and were to be carried out by private contractors with the participation of the MOH-CH Division. The level of this participation was to be determined in part by the MOH's research/survey workload. In cooperation with the Community Health Division and working with the regional health offices, contractors were to carry out the surveys. The data collected was to be used as the basis of potable water supply and sanitation system construction, health promotion activities, and progress evaluations. Communities were to participate in the surveys as a means for building community understanding of the link between unsafe water and illness.

The ANDA regional offices and local mayors were to approve the sub-project implementation plans following the approval of these plans by the MOH health promoters and the representatives of the water user committees. If necessary (e.g., due to technical complexity), a sub-project implementation plan could be channeled through the ANDA-MU and through the MOH-CH. On a random selection basis, these sub-project implementation plans were to be reviewed within USAID by the Project support group to assure compliance with the potable water supply, sanitation and health education goals of the Project.

Action Plans - The ANDA-MU and the MOH-CH were to prepare annual Action Plans, with the aid of the TA contractor, for submission to SETEFE and USAID for final approval and funding.

These plans were to be prepared according to GOES and USAID standards, but were to accommodate the preparation and approval of the actual sub-projects during the year. The plans were to reflect the anticipated joint efforts of MOH and ANDA at the community level.

Since the selection of specific sub-projects was to occur after preparation of the plans, the Action Plans would include budgets based on an estimate of the number and types of sub-projects and health education programs which might be implemented in each region.

In the initial two years, the Plans were to include a strategy which developed the capacity and coordination between the regional offices of the MOH and ANDA, and procedures for designing, approving, implementing, and monitoring all aspects of the sub-project, in order to ensure their timely and complete implementation in compliance with Project selection and design criteria. TA was to help design working models which could serve as prototypes for the process.

Community Participation - Component III was to stress a bottom-up process of generating sub-project implementation plans and designs, which, in most cases, the communities would manage and maintain. This process was to rely on the water users associations, the community health workers of MOH, and trained and experienced ANDA water promoters. The mayors and the other municipal officials of the municipalities in which the potable water supply and sanitation efforts would take place were to play a coordinating role between the local communities or villages and the field and regional representatives of the implementing agencies.

Cost Recovery - Each sub-project needed to arrange donated labor from the targeted beneficiaries. The community was also required to manage and maintain the system (on the pump, for example); pay in full for the operation and maintenance costs for the chosen level of service such as the well and hand pump; and assume responsibility for the full incremental cost of higher levels of service elected by the community. ANDA was still to accomplish and finance complex maintenance and repair beyond the reasonable means of the community.

Contracting - The design and construction of the majority of sub-projects were to be executed by contractors from the private sector under contracts prepared by the Management Unit, and awarded by the GOES. Contracts were to be competitively awarded directly by the MOH-CH or ANDA for training and materials production, and by the ANDA-MU for the water supply and sanitation infrastructure.

This Component was also to finance: vehicles for the ANDA regional offices; machinery, materials and equipment; salaries of additional health promoters; health education and training materials; base line studies; organization of water users by the health and water promoters; and construction supervision.

A comparison of the projected and actual budget for Component III is shown in Table III-8, below.

Table III-8
Projected and Actual Budget for Component III

IMPLEMENTING AGENCY	IN MILLIONS OF DOLLARS EQUIVALENT					
	PROJECT PAPER			ACTUAL		
	USAID	GOES	TOTAL	USAID	GOES	TOTAL
MOH	$ 2.67	$ 1.21	$ 3.88	-0-*	$1.98	$ 1.98
ANDA	19.07	7.12	26.19	4.44	7.00	11.44
PVOs/NGOs**	-0-	-0-	-0-	8.00	-0-	8.00
TOTAL	**$21.74**	**$ 8.33**	**$30.07**	**$12.44**	**$8.98**	**$21.42**

* However, commodities funded under the LBII contract, e.g., computers and vehicles, were provided to the MOH.

* PVOs/NGOs are discussed under Chapter IV.

A comparison of the projected, actual and planned outputs for Component III are shown in Table III-9, below.

Table III-9
A Comparison of Projected, Actual and Planned Outputs for Component III

OUTPUTS	PROJECT PAPER	ACTUAL AS OF 9/30/94	PLANNED AS OF 9/30/96
1. SMALL WATER SYSTEMS REPAIRED	120	-0-	1*
2. NEW SMALL WATER AND SANITATION SYSTEMS INSTALLED	900	759	858
3. HEALTH AND SANITATION TRAINING PROVIDED TO POPULATION OF COMMUNITIES	EQUAL TO TOTAL OF 1 AND 2 ABOVE		
4. WATER COMMITTEES FORMED FOR EACH NEW SYSTEM, OR EXISTING COMMUNITY-LEVEL COMMITTEES ACCEPT ADDITIONAL RESPONSIBILITY TO FORM OR ACT AS WATER COMMITTEES	EQUAL TO TOTAL OF 1 AND 2 ABOVE	709	709
5. LATRINES INSTALLED FOR COMMUNITIES, SCHOOLS AND HOMES IN COMMUNITIES	16,000	4,530	14,648
6. METHOD FOR COLLECTION OF USER FEES, AND FOR MAINTENANCE AND OPERATION OF SYSTEM, IN PLACE AND OPERATING AT EACH NEW SYSTEM	EQUAL TO TOTAL OF 1 AND 2 ABOVE	NO USAID RECORDS	
7. RFGIONAL SHOPS OF ANDA ESTABLISHED, EQUIPPED AND STAFFED WITH MANAGER, SUPPORT PERSONNEL, TECHNICIANS AND WATER PROMOTERS.	YES OR NO	NO	NO
8. AUTHORITY AND RESPONSIBILITY FOR RURAL WATER PROGRAMS DELEGATED BY ANDA TO REGIONAL OFFICES	YES OR NO	NO	NO

* ANDA only. See Chapter IV for PVOs/NGOs.

2. Component III Implementation History and Achievements

a. Role of USAID

USAID decisions and actions prior to and during the design of the Project pre-destined much of what was to happen during the life of Component III. USAID had various periods of inaction and several shifts in position on this Component, many of which were brought about by ANDA's inability to perform adequately.

Since this Component was essentially a public health activity, one would have expected it to be a separate project within the MOH, especially when the MOH had a unit (PLANSABAR) already working to provide rural water supplies. It was the decision of USAID not to work with PLANSABAR, contrary to the recommendation of the chief of the design team and to incorporate the Component into what was essentially an infrastructure project. The decision to include this Component reflected, in part, pressure from USAID/Washington to reduce the number of management units. The decision not to work with PLANSABAR was based on previous results of PLANSABAR with IDB-funded water systems, an experience so bad that USAID forbade the use of HCOLC for that Project's counterpart, i.e., USAID determined that PLANSABAR was not capable of implementing the Project successfully.

The USAID actions and inactions which weighed heavily on the implementation results include:

- USAID took six months to get a PIO/T to the Contracts Office to start the contracting process for the TA Contractor. The selection process, including the preparation of the RFP, the development of a short list, and the final selection, took several more months. Unfortunately, as a result of these delays, several members of the originally proposed technical team were unavailable for assignment and had to be replaced.

- USAID authorized, then de-authorized, then re-authorized ANDA to execute contracts; this resulted from new instructions from AID/Washington on Host Country Contracting. In addition, a lot of proposed ANDA contracting actions were rejected by USAID/El Salvador as they did not meet USAID requirements (despite TA and USAID team assistance in preparing them) and had to be re-done. Because some of these had been passed as acceptable by TA and USAID personnel, this backtracking contributed to a decline in the relationship between USAID and ANDA.

- USAID brought in an outside expert who proposed a re-design of the Project. After ANDA accepted the recommendations and finally submitted a plan acceptable to the Project Committee, USAID did not give ANDA the tools to implement the new directions. Rather, USAID reversed its position after about a year was lost and ended ANDA involvement in the Project.

- USAID's Office of Health showed no real interest in Project 519-0320 until 1993. In fact, one Office of Health Director ordered his staff to ignore it due to "other priorities". As a result, enough emphasis may not have been placed on the health education interventions.

b. Appropriateness and Effectiveness of Implementing Agencies

The initial implementing agencies of Component III were the MOH and ANDA, with assistance from the TA contractor under Component IV. The MOH was to be responsible for health education and promotion prior to construction of water systems and latrines. As an agency with a relatively well trained and dedicated field force of health promoters and sanitation inspectors already resident in most of the cantons and municipal towns, the MOH was a natural and probably the only choice at the time for the health education part of the Component. The MOH field staff performed this function fairly well according to field reports, and cooperation between ANDA promoters and MOH field staff was quite good at the local level. However, MOH field staff had limited expertise in community organization and had many other tasks to perform such as immunizations, MCH, etc. In addition, coordination at the central level of the MOH was not achieved between the three sections of the MOH which received Project 519-0320 support; the Health Educators Units, the Department of Sanitation, and the Community Health Unit. The first two received funding primarily for regional level staffing while the Community Health Unit received staff support at the central level.

ANDA, which had very limited experience and had not expressed strong interest in rural WS&S, was the choice by default for implementing the engineering and construction aspects of the Project. However, there were a number of other difficulties with the implementation process: The basic design of Component III was flawed; there were problems getting ANDA to accept USAID contracting rules; the TA Contractor didn't initially provide the personnel promised in their proposal; and there were different signals coming from USAID at different times about how to proceed with ANDA. (As noted earlier, PLANSABAR, the rural water office of the MOH, had proven ineffective on recent IDB-funded projects and systems; in fact, many were non-functional. One output of this Component was to repair some of the PLANSABAR systems.

Until 1989, USAID/El Salvador had no successful experience with PVOs/NGOs in construction of permanent infrastructure. Further, the war was still in progress and PVOs/NGOs willing to undertake such a program were not available at that time. It was not until 1991-92, under the Earthquake Recovery Project, that PVOs/NGOs as a group established a good track record on infrastructure projects, including water systems. Eventually, during the earthquake reconstruction period, a standard modus operandi was established between USAID, the GOES agencies, and the PVOs/NGOs. Thus, when ANDA was unable to accomplish the intended work under the Project, USAID would turn with more confidence to established PVOs/NGOs after the war to continue with both system installation and the training and organization of local committees and municipal governments. (The three U.S. PVOs/NGOs now working under Components III and V were not among those used in the Earthquake Program.) The roles of the U.S. PVOs/NGOs and municipalities in WS&S were expanded under Component V and are discussed in Chapter IV below.)

c. Appropriateness and Quality of Inputs

Scheduled inputs under Component III were water system construction materials and equipment, vehicles, office equipment, engineering and construction contracts, US and in-country training, and administrative costs. All of the commodities purchased under the Project were appropriate and adequate for the intended use. The existing ANDA drilling rigs, ten of which were purchased by USAID in 1987 under Project 519-0279, should be included as unsatisfactory inputs, since these were crucial to the success or failure of the Component as originally designed (see Section 4 below). The lack of well drilling equipment and related know how in El Salvador would prove a very serious and long term implementation problem for the Project. Technical assistance to ANDA is discussed under Component IV below.

The critical inputs on which success depended were engineering and construction in conjunction with community organization and health activities. Most of these, at least in the first four years of the Project, were deficient in both formulation and execution.

d. Effect of Commodity Management on Implementation

Problems with the use of equipment and the control of inventory affected Component III implementation.

The attempt to use the well drilling rigs purchased earlier proved fatal in two ways: (1) the wrong type of equipment and (2) the wrong method of deployment. Moreover, the rigs were not ready to operate even after the decision was made to try them with ANDA drilling crews, and with TA assistance, nor were enough spare parts available to support the equipment when it was finally put in operation.

Later in the Project, it was found that parts from the well production units which were scheduled to be issued to PVOs/NGOs, e.g., pumps and motors, had been issued with MU approval to other ANDA projects. In dollar terms, this was not a large diversion, but it did limit the number of wells the PVOs/NGOs could put into service until they were replaced.

TA was provided to help ANDA overcome its inventory management problems. In addition, USAID had continuing difficulties with the unauthorized and improper use of USAID-funded vehicles donated to the MOH.

e. Effectiveness of Any Institutional Strengthening on Implementation

A considerable amount of the vehicles, computers and other commodities were provided to assist in the implementation of Component III. On-the-job training, seminars and workshops were also provided to ANDA and MOH personnel, particularly to the ANDA-MU and the ANDA and MOH field staffs (the ANDA water promoters and MOH health promoters). This contributed to the increased quantity and improved quality of performance of the field personnel. However, the efficiency and effectiveness of the MU never reached a satisfactory level.

After the re-direction of the Component, efforts were made to strengthen the capability of the ANDA Well Drilling Unit with commodities and TA (first short-term, then long-term). These efforts were too little and too late, and in essence, a mission impossible given the overall target for wells and the reality that the unit was to use the inappropriate USAID drilling rigs for Project implementation.

f. Major Implementation Impediments and Related Adjustments

A number of problems which beset the Component during the planned five-year life of the Project are summarized below:

- Inability or unwillingness of the ANDA-MU to draft a suitable set of specifications, terms and conditions for the drilling of wells by the private sector.

- Reluctance of the President of ANDA to approve rental of the rigs under any circumstances because of risks to the rigs and his personal exposure as the official responsible for use and condition of the rigs. (The evaluation team agrees with his judgment in this matter. This problem is one of two or three major reasons why the plan to rent the equipment was unworkable.)

- Neither USAID, TA nor ANDA knew until late in the Project that the drilling rigs were unsuitable.

- Reluctance of ANDA's managers and/or legal barriers which prevented the effective decentralization of ANDA operations. The one function run from the Regional Offices which proved effective was well rehabilitation, although it was not a major part of the Project as designed. This was an idea promoted by the TA and USAID as a means of increasing access to potable water. Critical decentralization of authority for decision making was never achieved.

- The inability of ANDA or the private sector engineers to produce suitable plans and specifications for renovation of existing systems in need of repair, as opposed to designing and building completely new replacement systems. At least a part of this problem was caused by a lack of, or the inability to access as-built plans for the original systems. PLANSABAR in particular refused to provide plans of its systems which needed overhaul.

- USAID was not able to recruit a suitable expatriate PSC engineer for the WS&S management position to assist the Project Manager. The one candidate who was accepted in 1992 proved ineffective after a few months and his contract was terminated, but a critical amount of time elapsed during which strong leadership was needed. Success of this Component, if it were to be achieved, required the full time effort of a senior officer with extensive project implementation experience who could detect problems in both project design and implementation and make mid-course changes quickly. It turned out that such an individual could not be found. Even if it had been possible to find someone suitable, it is unlikely that the Mission could have given this PSC position the necessary authority. (IRD/MID made the

best of the situation by providing additional MID and TA personnel resources to the Component.)

- ANDA did not demonstrate a commitment to use this Project to serve the rural population. Dedication to the idea varied over the life of the Project, but service to relatively small rural population centers was not on ANDA's list of priorities.

In summary, USAID did provide the leadership and motivation which ANDA needed in order to effectively or efficiently execute the construction/repair operations of this Component (repairs which were all the more needed because of the basic design flaws in the ANDA activities). ANDA proved unable to function without the leadership and motivation of USAID.

g. Mid-Course Changes in Implementation

As a result of the low level of productivity of Component III and the disagreements over the contracting process between USAID and ANDA, the USAID Director brought in a water expert from another USAID Mission to review the situation. This USAID expert recommended re-designing the Component, changing the "what" and the "how." He suggested there should be less emphasis on wells with hand pumps and more emphasis on water systems. Implementation by contractors was to be dropped in favor of the ANDA well drilling unit, with a secondary role for PVOs/NGOs. This proposal took care of the basic design flaw of having contractors using ANDA rigs, but the Project was still left with the inappropriate rigs and an ANDA well drilling unit which had not received any technical assistance.

The proposed re-direction was adopted in an ANDA-USAID agreement on June 9, 1992, and the necessary funding and goal re-programming was approved by USAID on October 22, 1992. USAID requested a re-structuring plan to implement the agreement, and this was a pre-condition to allowing the expansion of personnel in the regional offices. The President of ANDA agreed to submit the plan by October 12, 1992.

The re-structuring plan finally was submitted to SETEFE by ANDA, reviewed and revised, and then re-submitted to USAID in February 1993. USAID rejected it about a month later. A draft re-write was submitted to USAID in late May. It was approved by the Project Implementation Committee July 26, 1993, but never made official, because of objections of higher level officials in USAID/El Salvador.

In the interim, USAID uncovered numerous examples of inadequate supervision of the few construction contracts which had already been let by ANDA. USAID had complained informally to the ANDA President about ANDA-MU performance in construction and construction supervision. He responded by allowing the PSC contracts of all of the MU top management to expire. The new head of the MU was found by USAID to be uncooperative, not working with USAID or the TA team. In addition, ANDA called for practically a doubling of personnel in the MU at a time when USAID's broader policy was to urge the GOES to reduce government payrolls.

In late October 1993, after three months of silence from USAID, the President of ANDA wrote asking for approval of the re-structuring plan. The Deputy Mission Director responded on October 27th that USAID could not accept the proposed doubling of staff and would be prepared to meet soon. The meeting was held November 4th, and a new ANDA-USAID agreement was signed November 22nd which reversed the USAID position on the new directions, took away USAID support for any new Project activity by ANDA, and provided for the gradual dissolution of the MU. This agreement did allow a few of the MU personnel to be used to establish a rural water regulatory unit which would later become a permanent part of ANDA. The agreement also provided that the execution of all new sub-projects under the Project would be accomplished by expanding the participation of U.S. PVOs/NGOs and municipalities.

The U.S. PVO/NGO and municipality implementation was now the "only show in town". Two PVOs and a private firm operating as an NGO were engaged to salvage as much of the proposed effort as feasible. The early success of two of them led to a two-year extension of the Project for U.S. PVOs/NGOs and municipal WS&S activities (ProAg Amendment No. 9 of April 18, 1994). This agreement should result in some accomplishment, albeit far short of the original goals of the Component. The normative and regulatory roles envisioned for ANDA in support of WS&S were now to be the responsibility of ANDA's new Rural Development Division.

h. Related Other Donor Assistance

The GOES Social Investment Fund (FIS) has built and continues to build small water systems and latrines in much of the country under loans from the IDB. At one point, FIS stopped building latrines due to their low usage (as a result of the failure of their program to deliver adequate hygiene messages), but they now report that they will resume sanitation activities with a more aggressive education program. A FIS representative stated that sanitation is so important to the country that it must not be omitted from its program. FIS is expected to continue in the WS&S sub-sector for at least a few more years.

3. Validity of the Project's Original Design and Assumptions as They Relate to Component III

The Component description presented in Section 1 above is deliberately detailed. It comes almost unchanged from the Project Paper and the Project Agreement. From the complicated implementation arrangements proposed, one of the major reasons this Component failed as originally designed can be easily seen. The implementing bureaucracy and procedures planned for this Component required that a number of disparate organizations and activities mesh with almost clockwork precision, a precision which, in retrospect, was unrealistic from the outset.

Component III is now making a significant improvement in the lives of a number of people, but until recently, it was a bureaucratic nightmare which could not overcome its own complexity.

Seeds of failure were sown for this Component two years before the Project was conceived when ANDA purchased with USAID funding the ten well drilling rigs which were completely

inappropriate and inadequate for the purpose intended. Not only were the rigs wrong for El Salvador, as experienced well drilling experts were later to prove, but the proposed deployment of the rigs was based on a flawed concept: rental of the rigs to private contractors who were to drill wells under contract to ANDA. (Rental was proposed due to a paucity of private sector rigs in El Salvador.)

The rental of government-furnished construction equipment has been tried before on USAID projects, and to the knowledge of the evaluation team, has never been successful. Contractors often tear up the equipment and then submit claims for delay each time a piece of equipment breaks down. Parts for the equipment are almost invariably lost. At the end of each contract, and sometimes before, the equipment usually must be completely rebuilt before it can be used on another contract. A string of claims, counter-claims and litigation then results. If the equipment proves inadequate, the probability of legal actions becomes even greater.

In any event, in this Component, no contracts for drilling which included rental of ANDA equipment were ever awarded. (It is of no consolation that any of the local engineers who conceived of and sold this concept to the Project are still with USAID or ANDA; the USAID engineers in fact, were later separated for cause, although not for this issue.)

When local consulting engineers (private sector) proved unable, often for reasons beyond their control, to adequately prepare plans for the repair of existing systems, the second major element of this Component also proved undoable. In addition, given the fact that the important drilling contracts were not going to be awarded as planned, the entire system was bound to collapse.

4. Component III Status

Component III Status as of 9/30/94 (From the Project Paper Logical Framework)		
PURPOSE	INDICATORS	STATUS AS OF 9-30-94
TO INCREASE ACCESS TO WATER SUPPLY AND SANITATION SYSTEMS FOR RURAL POPULATIONS, AND TO INCREASE PROPER UTILIZATION OF WATER AND SANITARY SYSTEMS IN BENEFICIARY FAMILIES	A. 600,000 PEOPLE SERVED BY NEW OR REPAIRED FUNCTIONING WATER SYSTEMS AND SANITARY FACILITIES, RAISING ACCESS FROM 13.5% TO 30%	19%
	B. 90% OF FAMILIES IN TARGET COMMUNITIES KNOW AND PRACTICE GOOD AND CORRECT USE OF WATER	25%
	C. 90% OF SCHOOLS IN THE TARGET AREAS HAVE ADEQUATE AND CLEAN LATRINES	32%
	D. HEALTH AND SANITATION PROMOTERS HAVE ACTIVE CONTACTS WITH USERS OF 95% OF RURAL POTABLE WATER AND SANITATION POINTS INSTALLED UNDER THIS PROJECT	88%

5. Recommendations to USAID and/or the Host Government:

(a) The GOES should relieve ANDA of responsibility for WS&S outside the San Salvador greater metropolitan area as fast as the municipalities can be trained and have developed the capability to take over and operate the ANDA-owned systems. In so far as possible, delivery of service to the public should lie with the level of government closest to the people served, as long as this local government is capable of delivering these services. In the case of WS&S, this level should be the municipality or a local water committee.

(b) ANDA should not allow its Rural Development Office, which regulates and sets standards for rural potable water supplies, to continue to disintegrate until and unless this function is assumed by another entity.

(c) The GOES should begin to study possible sites for potable water reservoirs. The water table, or water level in aquifers, in El Salvador is found to be dropping and in some places wells have ended up as dry holes. The time probably is not far away when urban centers and even small towns will have to begin to build relatively small surface water reservoirs and water treatment plants to assure their water supply. This has happened in other countries and is likely to happen here. Water resource agencies in El Salvador may be aware of this, but will likely put off facing the situation.

D. Component IV - Institution Strengthening, Project Support, Monitoring, Evaluation & Audit, and Inflation/Contingency

Discussion of Component IV will be presented using a sub-section for each of the topics included in the title; the focus, however, will be on institution strengthening because the Component was to directly support Project implementation. The original and actual budgets for Component IV items are as follows:

Table III-10
Component IV - Original and Actual Budgets

ACTIVITY	ORIGINAL BUDGET ($ MILLIONS)			ACTUAL BUDGET ($ MILLIONS)		
	USAID	GOES	TOTAL	USAID	GOES	TOTAL
Institutional Strengthening	$ 8.02	--	$ 8.02	$10.55*	--	$10.55*
TA	(7.46)	--	(7.46)			
Training	(.31)	--	(.31)			
Commodities	(.25)	--	(.25)			
Project Support	4.38	--	4.38			
Evaluation & Audit	3.00	--	3.00	.65	--	.65
Inflation/ Contingency	9.84	8.52	18.36	.15	.38	.53
TOTAL	$25.24	$ 8.52	$33.76	$11.35	$ .38	$11.73

* Contains funds for Project Support

NOTE: No separate funding was projected for Monitoring.

1. Institution Strengthening

Component IV did not have Project Purpose objectively verifiable indicators (OVIs) for the End of Project Status in the Logical Framework. Project Output OVIs included the following:

- A Management Unit (MU) would be established and functioning in the DGC.
- Management systems (MIS, Personnel, Accounting, Procurement, and Contracting) would be installed in the DGC MU, systems procedures would be published, and the procedures in place and utilized.
- The MU of ANDA would be expanded, fully staffed, and functioning; management systems would be installed and in use (see DGC MU).

The institution strengthening called for in the Project Paper was to be provided in the form of TA, training and commodities. The technical assistance was to be used primarily to support the MUs of DGC and ANDA who were to have primary responsibility for the execution of Components II and III of the Project and were also participants in Component I (and V when it was established in 1992). However, some assistance was also planned for other offices within MOP and ANDA and for the Community Health Department of the MOH. The latter was to work with ANDA to ensure the proper use of potable water and sanitation facilities which ANDA was to construct in rural areas. The TA contractor was also to provide support to other Project implementing agencies upon request and/or approval of USAID.

The TA contractor was also to perform studies to: a) assist ANDA and MOH to deal with the environmental considerations of the Project; b) provide information on policy and procedural constraints which might impede effective performance of the implementing agencies; and c) provide information on policy dialogue issues which might have an important impact on the sustainability of Project interventions.

The TA, training and commodity support provided for institution strengthening of the different implementing agencies is discussed below by implementing agency.

a. ANDA

(1) Sub-Component Description

At the central level, ANDA and its MU were to be provided the TA, training and commodity assistance needed to improve its organization, staffing and personnel management, financial management, technical engineering skills, community organization and promotion skills, maintenance capabilities, and procurement procedures. With contractor assistance, the MU was to develop workable financial management procedures, procurement systems and operations manuals for Component III.

The ANDA regional offices were to receive assistance and were to add civil engineers, water promoters and maintenance personnel. These offices were expected to play a critical role in Project implementation because ANDA's water promoters would be the direct linkage with the MOH health promoters and to the municipalities and villages where the sub-projects were to be implemented.

A need for long-term TA was anticipated, particularly in the MU, in the areas of project management, documentation, health education and community organization, sanitary engineering, financial management, personnel management, and data processing/management information systems. Short-term assistance was to be available for auditing, vehicle and fuel control, the writing of technical specifications, procurement procedures, operations research, and health education materials development and training.

TA was also to be provided to enable ANDA and the MOH to deal with environmental considerations. This TA was expected to be of two types:

- studies to identify potential environmental problems; and
- assistance in developing designs of minimum-cost water and sewage disposal systems for rural areas which would avoid adverse environmental impacts.

Three long-term TA personnel were to work exclusively in support of ANDA and the part of the Ministry of Health dealing with Component III, as follows:

Project Management Specialist - Water and Sanitation
Water Supply and Sanitation Engineer
Health Education and/or Training Specialist

In addition, two long-term TA personnel were to provide part-time assistance, in conjunction with support to other implementing agencies:

Finance and Accounting Specialist
Data Processing/Management Information Systems Specialist

(2) Institution Strengthening Activities Carried Out

Although the primary focus of the institution strengthening activities in ANDA were related to the MU, the Project also provided assistance to the warehouse operation, regional offices, the Rural Development Division (established in March 1994), the ANDA Drilling Department, and the ANDA Water Quality Laboratory. Each of these will be discussed in turn.

Management Unit

When the first two members of the TA team arrived in September and October of 1990, the MU ad already been created and had some 20 employees. This included a few long-term ANDA

employees who had left to take a contract with the MU, but most of the people were new to ANDA and to USAID regulations and procedures. Thus, the immediate work of the TA team was to help organize the MU office, recruit staff needed for the MU, and begin on-the-job (OJT) training of MU personnel.

Unfortunately, the training could not be carried out as intensively and methodically as needed because of the pressure to show some implementation progress, as there had been none in the first 14 months of the Project. MU personnel were not capable of producing the needed documentation for the contracting process without considerable training. Given this situation, and the inability or unwillingness of the line offices of ANDA to assist the MU, the TA personnel or USAID officers had to produce the documentation in order to move the implementation process. Several TA errors in the review of these documents negatively affected the relations between ANDA and USAID.

Even though there was limited training in contracting, a rational process for contracting and bid evaluation was eventually implemented. This was achieved because USAID prepared the model documentation and completed most of the IFBs. The TA team reviewed equipment specifications and also contributed to some document preparation, e.g., local contracts for system design and construction. The procurement process was closely monitored by USAID.

There were other areas in which training was more effective. OJT of engineers focused originally on computer training (the computers were provided by the Project) because most of the MU engineers had little experience with computers. After gaining some proficiency with the computer, the engineers were given training in project management and design. Technical training concentrated on ground water and wells. Out-of-country training included short-term courses on water system design in Honduras and Ground Water and Wells at New Mexico State University.

A considerable amount of training was given to ANDA Water Promoters, because this field position was new to ANDA. Promoters were trained in environmental assessment, well siting, pump repair and maintenance, and accounting. In the latter part of the Project, they were trained in abonera latrine construction and rehabilitation of hand dug wells. Ten promoters attended a water promotion course in Honduras.

Although considerable training was provided to ANDA MU personnel, little was institutionalized within ANDA for several reasons. First, the President of ANDA terminated a large number of the managers in December 1992 because he was dissatisfied with the MU's performance. The replacement personnel were given some concentrated training about the Project by USAID and the TA team, but little more because the new MU manager was even less willing to cooperate with the TA team. Finally, ANDA and USAID agreed that the MU should be disbanded, with a few of its staff going into a new unit within ANDA, the Rural Development Division.

Regional Offices

The TA team, with support of a short-term consultant, did an extensive study in early 1992 of the ANDA organization and tariff systems and developed and presented a plan for decentralization

(regionalization) of the rural water supply activity (the Organization of ANDA, LBII, 1992). The plan was approved by ANDA and USAID, and the MU established regional offices in Santa Ana and San Miguel. However, staffing levels never reached those envisioned for effective community outreach.

The offices were established with engineers and water promoters capable of construction supervision and well excavation and rehabilitation. The Project provided a vehicle and a computer for each office, plus motorcycles for each promoter; salaries and administrative expenses were paid from the Project budget (host country owned local currency or HCOLC). The TA team provided computer training for project management purposes. Intensive training was given to the promoters in well rehabilitation, construction of abonera latrines, and the formation of community water committees.

By mid-1993 ANDA was routinely providing the regional offices with hand pumps and construction materials which the offices used to carry out well rehabilitation sub-projects. A restructuring plan was drafted in 1992 to increase the size of the existing regional offices and to establish additional regional offices. The plan went through several iterations before being submitted to USAID, where it then went through additional changes. The plan was never approved, and USAID decided in October 1993 to phase out its support of ANDA as an implementing agency. The existing regional offices continued to function through most of 1994 and exceeded Action Plan goals for the restoration of hand dug wells. With termination of Project support in September 1994, the MU field offices were closed.

Rural Development Division (DDR)

After the USAID decision in late October 1993 to discontinue its support of ANDA for rural water activities, USAID requested the TA team to prepare a plan to create a regulatory unit which would review and approve proposed water and sanitation projects in rural areas and inspect completed projects. It was anticipated that some of the personnel from the phased out MU would be the initial staff for the unit. In December 1993, short-term TA submitted a Plan for the Transition of the Management Unit into a Rural Water and Sanitation Regulatory Unit. ANDA agreed to the creation of the unit on the condition that it would be self-financing.

The Plan was revised and presented in February 1994 and approved in March. The unit was established in ANDA as the Division de Desarrollo Rural in April and began functioning as a part of the Gerencia de Obras y Proyectos. The Division contained only three engineers; currently there are two. Both of them received some on-the-job training under the Project when they worked in the MU. This is all which remains of the substantial investment in the ANDA MU which had over 60 personnel at one time. It is not yet clear whether the DDR will be staffed and made into an effective unit.

ANDA Well Drilling Department

In 1987, under Project 519-0279, USAID purchased five rotary and five percussion drilling rigs for the ANDA Drilling Department. In early 1991, IRD/MID decided that ANDA should make this

equipment available for private sector rental. There were difficulties in getting the Department to provide an accurate inventory and status of the equipment and to decide upon an appropriate rental fee to be charged contractors. Given the foregoing and the general problems of getting contracts approved, no contracts were ever let involving rental of ANDA rigs.

During the March-April 1992 ANDA/MOH/SETEFE/USAID/LBII assessment of Component III progress and structure, it was decided that the ANDA Well Drilling Department should utilize the USAID-donated rigs to help implement the Project and USAID would support the Department with commodities and TA. The Department carried out a pilot program of 10 wells in the latter part of 1992. In February 1993, the Department was charged with the task of drilling an additional 30 wells. Short-term TA worked with the Department from February to May 1993 to get all the rigs mechanically operable.

During the first four months of Project operations, the Department averaged four wells per month; subsequently, productivity declined to one or two wells a month, occasionally none. The Department lacked the materials, technical capability and logistic support to sustain acceptable levels. It was decided to provide more comprehensive TA and a father and son team came in early November 1993 to provide TA in drilling operations and equipment repair.

The TA team kept at least 7 of the 10 rigs operable at all times, but productivity of the Department continued to be constrained by the lack of vehicles, inefficient work schedules and the diversion of some of the rigs to other ANDA activities. About $283,000 of commodities were procured trying to keep the rigs operational. At the conclusion of their assignment in July 1994, the TA team recommended that: 1) the Drilling Department's activities needed to be reduced and more sharply focused; 2) drilling of new wells, except as an emergency, should be done through use of the private sector; 3) the percussion rigs should be limited to well and pump servicing; and 4) the USAID-donated SIMCO 2800 drilling rigs should be phased out.

Because it became obvious that little institution strengthening could be carried out with the Drilling Department in the time remaining, USAID directed the TA specialists to provide some assistance to the PVOs/NGOs working on Project 519-0320 and to review well drilling capability in the private sector in El Salvador and neighboring countries. The TA team concluded that Salvadoran well drilling capacity could meet Project 519-0320's needs, but not the country's total needs. The TA specialists also held workshops for PVOs/NGOs and ANDA covering hydrogeology, well design, drilling equipment, supervision/monitoring of drilling field operations, contracting for well drilling, and well maintenance.

ANDA Water Quality Laboratory

In January 1993, the TA Team provided an assessment of the ability of the MOH and the ANDA Water Quality Laboratories to support the testing of newly completed or improved wells under Project 519-0320. The assessment included recommendations for sampling schedules and parameters for potable water projects, as well as procurement plans for the purchase of laboratory equipment.

Technically, the monitoring of water quality for Project 519-0320 sub-projects was the responsibility of the MOH; however, the MOH Water Quality Laboratory provided no sampling services nor expressed any interest in providing these services.

Because the ANDA laboratory did provide physical-chemical samples of water from Project 519-0320 wells and attempted to provide analyses of the samples, it was provided with about $75,000 of equipment plus a computer and one set of water quality data base software. The TA team set up a water quality data base for physical-chemical data from ground water samples throughout the country; however, this data base was not maintained by ANDA.

Although the ANDA laboratory has the capability to perform limited water quality analyses, it is unable to comply with any realistic routine sampling schedule due to an inadequate supply of vehicles. The TA team concluded that additional assistance beyond the scope of Project 519-0320 would be required to effect sufficient changes to the ANDA laboratory to enable it to perform its functions.

Environmental Considerations

The TA team developed environmental assessment forms and trained the ANDA engineers and promoters in their use. For water supply/well construction, the criteria included analysis of natural hazards, proximity to streams and other possible sources of flooding or near-surface infiltration, water table levels, capacity estimates, and susceptibility to incidental construction damage. For latrines, soil types and their permeability, water table levels, proximity to streams or wells, susceptibility to flooding, and minimization of incidental construction damage were considerations.

A major adjustment from the Project Paper was the wholesale substitution of the dry abonera style latrine for the pit latrine. This resulted in greatly increased costs, but it was unavoidable due to the environmental criteria regarding sub-surface conditions and proximity to water sources. The TA team conducted studies on the length of time required for completion of biological decomposition; and as a result of these studies, a six to eight-month curing time was established. These studies also contributed to the decision to have a two-chamber design and the determination of the minimum chamber size.

The TA team arranged observational trips to neighboring countries to study how environmental concerns were handled and to determine if some practices should be incorporated into Project 519-0320. Arrangements were made for a Costa Rican environmental engineering firm to present a week-long seminar on the evaluation of environmental impacts.

In the design and construction of wells, impervious well linings were included for the first three meters of depth to prevent surface infiltration and contamination. Adequate drainage was included to prevent ponding or standing water (a common problem with wells served by hand pumps). All wells were deep enough to assure uncontaminated supply. These criteria and specifications were included in each sub-project. In addition, each system was provided with an adequate chlorination system, and a program was established for future water quality testing.

(3) Current Status of Units Assisted, Procedures Established or Processes Installed

The principal entity being assisted, the Management Unit and its field offices, no longer exists. The Division de Desarrollo Rural (DDR) is a small unit with only two management and technical personnel. Both individuals came from the MU and had some on-the-job training while in the Unit in management/monitoring and computer skills. They did not receive any technical training in well drilling and maintenance.

Whatever management improvements may have been introduced in the personnel, accounting and procurement/contracting offices of the former MU have not been introduced into the regular ANDA administration. The environmental standards established under Project 519-0320 are being maintained by the DDR.

The DDR is still in the process of finding its role. Short-term TA financed from HCOLC from the last Action Plan is currently working on a functional statement and other formal organizational items. Subsequently, another expert will provide recommendations on how much the unit should charge for services rendered so it can become self-financing.

The ANDA Well Drilling Department received a significant level of commodities and short-term TA to keep its rigs operational. Towards the end of the Project, a TA team tried to provide some additional guidance to the Well Drilling Department to help it improve its operations. By this time, however, it was clear that USAID assistance would be ending soon, and there was little time to provide the type and quantity of TA and equipment necessary to make the Department an effective unit. The departing TA team advised the President of ANDA to restrict the use of the Drilling Department and its equipment (see (2) above) and dispose of the USAID-donated SIMCO 2800 drilling rigs. The President has heeded the first part of the recommendation, but has not yet disposed of the rigs.

The only institution strengthening activity provided to the ANDA Water Quality Laboratory was the set up of a water quality data base for physical-chemical data from ground water samples throughout the country, and the provision of some equipment, chemicals and a computer. The data base has not been maintained by ANDA. The commodities provided are being used.

(4) Assessment of Impact of Interventions

The only institution strengthening output projected for ANDA in the Project Paper, a fully staffed MU utilizing modern management systems, was not realized, nor will it be realized. In fact, it was unrealistic to assume that the MU would be a continuing part of ANDA unless the Project developed a system which would permit the Project activities to be self-financing or the GOES committed to provide funds to ANDA for continuing the rural construction activities. However, the only reference to this issue in the Project Paper was a notation that the GOES would "make its best effort to provide help to ANDA to maintain the systems built".

On the other hand, ANDA has created the Rural Development Division (DDR), which could become a self-financing unit committed to providing regulatory and advisory services to support the building and continued functioning of potable water supply systems in rural areas. While this is very modest in relation to the Project Paper goals, it has put ANDA in a somewhat more pro-active stance regarding fostering and maintaining rural water supplies; a situation which was completely non-existent at the beginning of the Project. Furthermore, given the attitude of ANDA's new President and the likelihood that municipalities are going to have some self-generated resources within the next year or two, the DDR could play a significant regulatory and advisory role in supporting rural water development during the balance of the Project, i.e., over the next 21 months.

It is reported that some of the personnel from the MU central and regional offices have been hired by the PVOs/NGOs carrying on the rural water development activities. If so, this would represent at least a temporary strengthening of the water development sector, if not ANDA directly, which has resulted from the Project.

b. Ministry of Public Works (MOP)

(1) Sub-Component Description

Technical assistance, training and commodities were to be provided to the Management Unit which was to be established as part of the Direccion General de Caminos (General Directorate of Roads or DGC). This institution strengthening would enable the DGC/MU to carry out Component II (road rehabilitation) of the Project; the MU was expected to continue after the Project. Long-term TA was to be provided in project management, documentation, financial management, personnel management, and data processing/management information systems. Short-term assistance was to be available for such areas as auditing, vehicle and fuel control, writing of technical specifications, procurement procedures, and operations research. Special attention was planned for the strengthening of road maintenance programs.

TA, commodities and training were also expected to strengthen the effectiveness of the Administracion de Maquinaria y Equipo (Machinery and Equipment Administration or AME), so that it could effectively support the DGC and the Directorate of Urbanization. AME was to receive assistance in the field of management, equipment maintenance, organizational development, and systems.

(2) Institution Strengthening Activities Carried Out

<u>General Directorate of Roads (DGC)</u>

The primary entity within DGC to receive institutional assistance was the MU. The latter had been organized but not fully staffed when the long-term TA team began work in September 1990. The team assisted in the staffing, organizing and equipping of the DGC/MU. Subsequently, they coordinated the development of procedures and documentation for contracting for rural road rehabilitation and provided training in the use of these procedures to MU personnel.

By early 1992, most of the MU personnel had been trained and were reasonably capable in drafting contracts for road rehabilitation design and construction and in evaluating tenders from contractors. MU personnel were also trained in road inventory process, various aspects of the planning of rehabilitation projects, and in construction supervision.

A special task facing the DGC was the rehabilitation of Bailey bridges which had been installed during the war to replace permanent bridges destroyed by the guerrillas. The TA team helped the Bridge Department engineers prepare maintenance management plans and schedules for future preventive maintenance of these bridges. Subsequently, the engineers learned to identify parts vendors, prepare technical specifications, tender procurement documents, evaluate bids and make final awards of procurement contracts.

Once a number of contracts were signed and construction started, it was important to be prepared to manage the projects and monitor results. Computers and appropriate software were procured and installed, and training was conducted on these systems with MU personnel. Later on, other offices would seek and obtain training in the use of computer programs.

Computers and related training were also provided to facilitate the increased and more complicated accounting workload which came with the expanding activities of Project 519-0320. Related training included procurement procedures for purchases under the extraordinary budget (HCOLC) and auditing procedures. TA worked with MU and DGC personnel to refine and improve these procedures in order to strengthen accountability and internal control. One example is the assistance which was provided to improve the physical layout of the DGC warehouses.

Training in host country contracting procedures was needed and provided, especially after 1992, when previously HCOLC-financed construction contracts were changed to dollar financing, thereby requiring different procedures.

With hundreds of miles of roads being rehabilitated, road maintenance requirements were clearly expected to expand. One of the basic requirements for budgeting for this task was a rural road inventory. During the life of the Project, there was an initial rural road inventory, an up-date of that inventory, then an inventory of the rural roads in the ex-conflictive zones, and finally an inventory of community roads (Caminos vecinales). The TA input for the achievement of these inventories was gradually reduced as the DGC took more and more responsibility for performing the inventories. The one exception was the inventory of the Caminos vecinales, which was done exclusively by TA personnel because of time pressures.

The TA team introduced sophisticated software through which maintenance costs could be introduced into the inventory data base, and projected budgets could be obtained, depending upon the level of maintenance chosen. Initially there was limited interest within the DGC for the SIAMV (Sistema Integrado de Administracion del Mantenimiento Vial or Integrated System for Road Maintenance Management), but the DGC eventually took over control of this system. In addition to manuals for the SIAMV, the TA team developed and gave training on a Supervisor's Manual and an Instructor's Guide for the Supervision of Unpaved Roads.

The provision of computers and training in the use of management systems was not limited to the MU. The regional offices also benefited, as did some other offices in the DGC, particularly offices which eventually began to participate in the implementation of Project 519-0320 activities.

The DGC also learned how to carry out an economic feasibility study and present it to a financing agency. The leadership of the new Road Maintenance By Contract Division benefited from USAID-funded observational tours of maintenance operations in Honduras, Chile and Argentina.

Although the Project Paper stated that Component II activities were environmentally neutral, the TA team stressed sound environmental practices to DGC in its maintenance and rehabilitation efforts, whether in-house or by contract. Construction supervisors were provided examples of sound environmental practices in horizontal construction which were taken from a U.S. Army Corps of Engineers handbook "Environmental Considerations in Road Construction Supervision."

Machinery and Equipment Administration (AME)

The Project objectives for equipment maintenance were: a) the maintenance of over 300 units of light vehicles and heavy construction equipment financed by USAID; b) the gradual transfer of the equipment maintenance functions in DGC and the Urbanization Directorate to AME; and c) the regionalization of AME. Giving priority to the maintenance of USAID-funded equipment was to ensure adequate support for Component II activities. Although the Project designers were not sure it could be attained during the life of the Project, another objective was to convert AME from an organization completely dependent on outside funding (presupuesto extraordinario or local currency generated from U.S. assistance) to a line organization of the MOP funded from the ordinary budget.

The Project Paper and the ProAg anticipated that one full-time TA person would work with AME. At Project start-up, however, AME was receiving assistance from another USAID source and no full-time TA for AME was included in the LBII contract. This AME consultant departed at the end of 1991. An audit of Project 519-0279, which had financed the establishment of AME, found over $1 million in parts and equipment for which proper accounting could not be found. In June 1991, the Director of AME and numerous warehouse and procurement personnel were removed for these irregularities, and the MOP made an appropriate refund to USAID.

The new AME Director asked USAID for TA to help improve his warehouse operations. Short-term TA provided this assistance, and in a December 1991 report, the consultant recommended a number of improvements. In May 1992, another short-term consultant came to begin procurement and installation of an integrated fleet and warehouse management system, the Consolidated Fleet Analysis (CFA) system.

There were a number of other short-term assignments of TA personnel for work with AME, culminating in August 1993 in the assignment of a long-term advisor. The latter was able to get part of the system (phases #3 and #4) installed and utilized in the warehouse. Phases #1 and #2, which were designed for fleet management, were not readily accepted by management personnel because they were not convinced that the CFA system would be an improvement over the existing

UNIX system. Because of various technical and administrative problems, the TA advisor could not demonstrate the greater flexibility of the CFA system and its utility to the managers until the last month of his assignment. In December 1994, the General Manager of AME indicated that he would request that the TA specialist return for a short period to help fully institutionalize the CFA system.

The Finance and Accounting Specialist and the Management Information System Specialist of the TA team also helped AME to: a) install the SETEFE budget system and extraordinary budget accounting system; b) establish an inventory control system; c) repair and re-configure the UNIX system. Computers and computer training were provided. This training included general skills and instruction in AME-specific software.

The equipment maintenance activities of AME were also enhanced through the provision of specialized equipment and training, e.g., English Language training so mechanics could use the equipment manuals which were available only in English.

(3) Current Status of Units Assisted, Procedures Established or Processes Installed

The DGC Management Unit has been reduced in size, but is continuing the same functions for Project 519-0394, Peace and National Recovery, as it did for Project 519-0320. Some of the people who left the MU have been absorbed into other parts of the DGC, e.g., a former head of the Project 519-0320 MU is now head of the MU which is managing IDB assistance to DGC, utilizing project management systems he learned in administering this Project.

One of the improved management practices of the MU was the monthly reporting of progress and financial disbursement on the road rehabilitation program. Up-to-date, reliable progress reports were prepared within a week of the month's end. This progress reporting system was introduced into other DGC divisions as well.

The SIAMV, after some refinement, was installed in DGC's Operations and Maintenance Departments. Among other things, this permits the preparation of a more detailed annual maintenance budget. It appears that the system will continue to be used, although not at its full potential. Furthermore, systems are not yet established to ensure that up-dated data will be entered into the system on a timely basis; thus, the reliability of the system will likely deteriorate after a couple of years if these systems are not improved.

The MOP has implemented a number of TA recommendations related to the work of its internal auditors throughout the Ministry, not just in the DGC.

The AME inventory is now being fully managed using CFA. The fleet management portion of CFA is not fully operational however. The General Manager told the evaluation team which was going to request the return of the LBII TA to work out the remaining bugs. If this takes place, it appears likely that the CFA will be maintained and used, at least as long as the current General Manager is there. If he stays a sufficient length of time, the CFA may become fully internalized in AME.

(4) Assessment of Impact of Interventions

Both the DGC and AME are more effective organizations as a result of Project 519-0320 activities, and both organizations have the potential to become even more effective if they fully internalize some of the systems which have been installed. Both have functioning regional offices. AME has improved its effectiveness in maintaining USAID-funded equipment and has taken over the responsibility for equipment maintenance of the Urbanization Division. The DGC still maintains some smaller shops, but most of their equipment maintenance is carried out by AME.

c. Ministry of Health/Community Health Division

(1) Sub-Component Description

It was anticipated that the MOH would receive some advice from the long-term TA, but no specifics were defined. Presumably, it was to be related to health education and community organization, and facilitating the work between the ANDA MU and the Community Health Division of the MOH. In addition, TA was to be provided to assist ANDA and the MOH deal with environmental considerations. This assistance was to be of two types:

- studies to identify potential environmental problems; and
- assistance in developing designs of minimum-cost water and sewage disposal systems for rural areas which would avoid adverse environmental impacts.

(2) Institution Strengthening Activities Carried Out

The bulk of the assistance to the Community Health Department of the Ministry of Health was to enable it to better perform its ongoing functions, particularly in rural areas. This included transportation assets (7 Jeep Cherokees and 10 motorcycles), audiovisual materials, and funding the printing of educational materials for distribution by field personnel.

Some institution strengthening by the TA contractor was involved through the supply of computers, software and training to the Community Health Department to help set up a management information system. Workshops were financed in which educational materials were developed and/or evaluated. Extensive training was provided to personnel in the Health Education Unit on the preparation of videos. Seminars were also organized for the health promoters on the construction and maintenance of latrines.

A series of studies were carried out by the TA contractor to help the MOH design its health education materials and presentation strategy. These included a base-line study; an ethnographic study on knowledge, attitudes and practices; latrine studies; an evaluation of the impact of training and educational work; and an intermediate evaluation of MOH progress in Project 519-0320 activities.

Some of the foregoing studies also touched upon environmental considerations. For a complete review of the Project activities designed to promote consideration of environmental concerns, see the separate sub-section in a. (ANDA) above.

(3) Current Status of Units Assisted, Procedures Established or Processes Installed

The MOH activities are continuing, although some of the field people have been let go as a result of the loss of extraordinary budget funding on September 30, 1994. The management information system is expected to be continued because it met a "felt" need of those responsible for Ministry activities, only a small part of which was funded by Project 519-0320.

(4) Assessment of Impact of Interventions

The studies carried out and the workshops financed provided the MOH with needed information and a framework within which to use the information to develop more effective programs. The vehicles will permit field teams to be more effective for at least a year or two more before replacements will be needed.

d. Other Implementing Agencies

(1) Sub-Component Description

Under the Project, the TA Contractor was to provide short-term assistance to CEPA agencies (ports, airports and railways) if approved by USAID. In addition, it was anticipated that MIS commodities would be provided to CEPA agencies and to CEL.

It was also proposed that training should be provided to municipal officials and community representatives for the potable water supply, sanitation and health education activities of the Project, and in order to learn the procedures for accessing the funds for local level sub-project implementation. The latter was to include information on the criteria to be used, the community organization and structure expected, user fees and maintenance responsibilities, and the forms and methods needed to obtain ANDA and MOH assistance.

It was assumed that ISDEM would be one of the providers of the training, and that it would train municipal and community leaders in registering their groups as legal entities under the Municipal Code. Training sessions were to ensure that sub-projects were generated from the villages, with appropriate assistance in the preparation of sub-project implementation plans.

(2) Institution Strengthening Activities Carried Out

<u>CEPA Agencies</u>

CEPA agencies participated in activities organized by the Finance and Accounting specialist and the Management Information System MIS) specialist. In addition, CEPA was provided with a $150,000

UNIX-based PC operating system tied together with a wide area network (WAN). The MIS advisor dedicated virtually a year in defining the system, procuring it, assisting in its installation, and training CEPA personnel in its use. The system incorporated CEPA headquarters, the Acajutla port, railroad (FENADESAL) headquarters, and the Comalapa international airport.

At the Acajutla port, computers and software were installed by the TA team, and training was provided in their use. The Pier Operations System replaced a manual operation and provides immediate information on the status of loading or unloading of any ship at the piers. The cargo manifest is downloaded automatically from a shipping company's computer into Acajutla's computers. The Port Operation System included a port warehouse and container yard management system.

The Comalapa airport also received MIS assistance which helped it to improve its data on both cargo and aircraft servicing.

In August 1991, a USAID-funded evaluation by Devres Inc. found weaknesses in the commodity management systems of all of the Project 519-0320 counterpart agencies. In May 1992, USAID requested LBII to bring in short-term TA personnel to deal with the Devres recommendations in each of the CEPA agencies. TA was arranged, and the recommendations were eventually implemented in all Project 519-0320 implementing agencies.

Project 519-0320 also financed offshore training for five CEPA personnel at three training programs: the World Trade Institute (WTI)-sponsored International Program for Airport Planning, Management and Operation, September 1992; the WTI-sponsored International Program for Purchasing, Procurement and Stores Management, July 1993; and Valuation Strategies and Techniques: Critical Factors in Successful Privatization, sponsored by the Center for Financial Engineering in Development, July 1993.

Salvadoran Hydroelectric Authority (CEL)

Short-term TA was provided to review commodity control in CEL's warehouses, and recommendations were provided for various improvements. These recommendations were implemented, and the deficiencies which had been reported were corrected.

A study of CEL assets was carried out by short-term TA in support of a privatization initiative. The study involved making a complete inventory and condition survey of CEL fixed plant and equipment assets, determining up-dated values, and refining the depreciation schedules for all asset classes.

During the war, CEL maintained special security arrangements. At its request, the Project funded a study by short-term TA of the appropriate security arrangements which were needed in a post-war environment.

Nine people from CEL, including the Chairman of the Board, three Directors and the General Manager, participated in six USAID-funded training/orientation activities. Three of the programs

related to private sector initiatives and privatization for electric power. Other activities included a six-month course in Power Systems Engineering, a short-term Advanced Management Program at the Central American Institute for Business Administration (INCAE), and a conference on the Handling of Materials.

Municipalities and Communities

The Project was to provide training to municipal officials and community representatives about the proposed activities of the Project and the process for accessing funds for sub-project implementation. This was accomplished by providing training to trainers who then trained the MOH health promoters and the ANDA water promoters. The two types of promoters collaborated in the process of informing municipal officials and community representatives. With the help of the TA specialist in Finance and Accounting, an accounting manual was developed for use by local water committees which would be responsible for collecting fees for water connections and/or water use.

It was assumed by the Project designers that ISDEM would provide the training for municipal officials and community groups on how to register their groups as legal entities under the Municipal Code. The evaluation team found no evidence that this ever took place.

(3) Current Status of Units Assisted, Procedures Established or Processes Installed

The CEPA management information system (with its wide area network) is functioning and providing CEPA management with a much more efficient system for communication with, and management of, its component entities. Similarly, the Acajutla Port and Comalapa airport operations are functioning more efficiently.

CEL's inventory control is more efficient. Nothing has been done with the asset evaluation study and may have to be re-done if no privatization action is taken in the near future. The security study was designed for two phases, but only the first has been carried out. The more detailed work needed to make the study results operational was not provided under the Project because CEL did not respond quickly enough on the Phase 1 study to permit the additional work to be carried out by the anticipated end of the project (September 1994).

Work by MOH health promoters and the three U.S. PVOs/NGOs on water and sanitation activities with municipal officials and community leaders continues under Project 519-0320. There are no longer ANDA water promoters involved in this activity.

(4) Assessment of Impact of Interventions

The more efficient operations at CEPA agencies should result in savings to those agencies and the users of their services. The impact on CEL has probably been minimal, although positive. The results of the work with municipal officials and community leaders were originally somewhat negative because the physical construction of wells and water supplies was so far behind schedule. Later, however, the results improved as construction began to take place, and the promoters revised

their messages as a result of evaluation feedback. One example was an increase in the use of latrines from 40 percent to 72 percent.

e. Policy Studies

(1) Sub-Component Description

Approximately 20 percent of the long-term TA was to be devoted to the study of policy and procedural constraints which were impeding effective performance of the implementing agencies, e.g., the tariff structures of the utilities, personnel staffing levels and policies, etc.

Several policy dialogue issues, such as the foregoing, nonpayment of the government's utility bills, and intra-governmental coordination, did impact on the sustainability of the Project. The TA Contractor was to prepare, during the first year of the Project, a prioritized listing of analyses to be developed over the life of the Project relating to key sustainability issues. The analyses were to be used during Component evaluations, in which policy-level personnel were convened, to assess Project effectiveness with and without the recommended policy changes.

(2) Policy Studies Carried Out

To implement the foregoing, the LBII contract included Task No. (12) as follows: "Prepare background data on utility rates and employment policies to facilitate the related policy dialogue."

On October 30, 1990, LBII passed to USAID a draft report on policy dialogue issues which might be studied. This report cited the following items as potential issues for policy dialogue:

- Inadequate tariffs, taxes and fees,
- Overly and inadequately staffed public sector entities,
- Insufficient current and capital budgets,
- Over-centralized decision authority,
- Complex institutional structures,
- Privatization and increased use of private sector contracting, and
- A lack of awareness of environmental issues.

The LBII paper went on to suggest two major studies: a Public Sector Management Study and a comprehensive Environmental Assessment. Both proposed studies would have gone far beyond the scope of Project 519-0320; on the other hand, both could have been down-sized to focus on the implementing entities in the Project and the environmental issues inherent in the Project. Neither an official response to LBII nor a revised proposal by LBII was found in the files by this evaluation team.

In its draft final report, LBII provides the following as its response to Task No. 12:

"The TA Team found very early that the temporary nature of AID funded positions within the GOES made sustainable institutional strengthening through those positions problematic. This and other personnel practices were discussed with and reported to USAID. Through specific studies such as the revaluation of the capital plant of CEL, and the decentralization of ANDA, the TA Team has provided background data on salaries, employment practices, costs, benefits, and rates for different public utilities. In addition the Team advised ANDA and CEPA in the fair costing for services. Discussions were also held with CEL, NRECA, and AID on electrical service rates and cost recovery."

(3) Assessment of Impact of Interventions

There were no studies carried out under the Project directly related to the policy dialogue issues discussed in the Project Paper. There were Project 519-0320 activities, however, which supported overall USAID policy dialogue. The most supportive one related to CEL operations and the possibility of permitting private sector investment in electricity generation. Regarding CEL operations, Project 519-0320 financed meters, the installation of which was an indicator of performance under the Policy Dialogue framework.

The CEL asset valuation study was helpful to planning by CEL, IDB and the World Bank. Significant investments are planned, as is privatization of some parts of CEL.

Project 519-0320 also supported the Policy Dialogue by financing the attendance of CEL Directors at conferences on the role of the private sector in power and on the privatization of electric power.

The general goal of privatization was also supported under Project 519-0320 by financing the visits of DGC managers to see road maintenance carried out by private contractors in a number of countries. Decentralization/regionalization goals were supported by studies of restructuring in ANDA and establishing and/or strengthening of the regional operations of DGC, AME and MOH.

f. Contribution of the TA Contractor

(1) Objectives of TA Contract and Contractor's Tasks

The hiring of the TA contractor was included under Component IV, Institution Strengthening. The general objective of the TA contract was "to provide institutional support " to the implementing agencies of Project 519-0320, and more specifically, "The institution building objective of the technical assistance is essential to the accomplishment of construction goals. The Contractor will ... insure that adequate institutional capacity is developed to enable them [GOES implementing agencies] to carry out required construction within the life of this five year project."

The Project Purpose calls for restoring and preserving vital public services and improving and sustaining the access of rural populations to markets. Yet the foregoing language seems to define "institution strengthening" as doing what is necessary to carry out the Project, not necessarily building sustainable capabilities. However, most of the tasks set forth in the TA contract could be

expected to have an impact longer than the Project if the institutions being strengthened, specifically the MUs, were expected to last beyond the end of the project. The Contractor's tasks were:

- Revise and update current the operating procedures of ANDA and the MOP to accommodate the increased workload of Project 519-0320,

- Plan in detail and facilitate the evolution of ANDA's regional structure,

- Plan in detail and facilitate the evolution of the MOP's regional structure to ensure a rational division of responsibility between the DGC/MU and the MOP's existing regional structure,

- Assist the DGC/MU to prepare for its eventual transition into a regular maintenance office for the national road maintenance system,

- Provide training to the staff of the Management Units in Engineering Project Management,

- Coordinate the health education activities between MOH and ANDA,

- Provide training in health education and community development,

- Provide training to the water promoters in the promotion of proper water usage, bookkeeping, water system operation and water system maintenance,

- Develop and establish preventive maintenance systems for both water and sanitation systems and rural roads,

- Develop and establish Management Information Systems in ANDA, MOP and MOH,

- Provide training on financial auditing practices, accounting and control functions, and financial analyses. Develop standard procedures manuals for administrative, accounting and control techniques,

- Prepare background data on utility rates and employment policies to facilitate the related policy dialogue,

- Furnish up to 100 person months of short term technical assistance in areas of specialization [to be identified],

- As part of the overall institution building technical assistance, assess the adequacy of staffing and equipment, including vehicles within the implementing organizations and recommend any changes which may be necessary for the achievement of project goals. and

- Purchase equipment for the GOES counterpart agencies, consisting primarily of computers, software, office equipment, and supplies, vehicles, and training aids and materials.

(2) Summary of Contractor's Performance

The TA team, of necessity, has played three different yet important roles:

1) provider of TA to strengthen the capabilities of the implementing entities, primarily in the MOP and ANDA, to carry out the program;

2) provider of TA to enable the implementing entities to maintain/sustain the fruits of the Project after it has terminated; and

3) implement activities, upon request of USAID, when the implementing agencies were not able or willing.

Unfortunately, the first long-term TA team leader assumed that the team was expected to do only (1) and (2), with little involvement outside of the MOP and ANDA (other than limited support to MOH). USAID insisted from the start, however, that the TA team should be concerned with the Project as a whole; it also insisted that (3) was very much a part of the team's Scope of Work. Furthermore, USAID tended to give more weight to (1) than (2). USAID also insisted that the Contractor should expand its day-to-day activities to include the tracking and provision of general support to the MOP, ANDA and the MOH in the achievement of Project goals and objectives and in compliance with USAID requirements.

In the preceding sub-sections of D.1., the TA team's role in the institution strengthening achievements in the various entities has been noted. In Annex H, there is a summary from the Contractor's draft final report of the Contractor's self-assessed accomplishments against each task listed in its contract.

(3) Conclusions on the Role and Effectiveness of the Contractor

The Contractor performed all of the tasks assigned, but the quality of the performance varied due to the capabilities of the individual TA specialist, the specialist's support from Team leadership, the attitude of the management of the implementing entity, the capabilities and/or attitudes of counterpart personnel, the attitudes of USAID personnel, and the support provided by USAID. The latter four items are not under the control of the Contractor.

With regard to Role (1), the TA team seems to have been particularly effective in its work with the DGC and reasonably so with the MOH and AME. Success with ANDA was not achievable, even with the TA team moving to Role (3). The ANDA situation, however, was an outgrowth of a number of factors, and the quality of the TA team was only one.

Of the eight TA nominees in the Contractor's winning proposal, only four came to El Salvador and one of them (the Team Leader) for only two months; apparently, he never intended to stay. The five positions which received substitute personnel were the ones which were most responsible for the achievement of Project objectives. The original team leader's replacement stayed two years and was replaced at USAID's request. The two Project Managers (to work with ANDA and DGC) appear comparable on paper to the original nominees. The Project Manager - Water received mixed reviews from USAID personnel; he contributed at one point to a serious misunderstanding between ANDA and USAID. The qualifications of the Water and Sanitation Engineer and the Health Education and Training specialists did not compare favorably with the original nominees; neither did the personnel who replaced them midway through the Project. The latter, however, were thought of more highly by most of the USAID personnel; they also received positive reviews from some GOES personnel.

The foregoing suggests that the Contractor should have fielded a stronger team, particularly in water and sanitation; a team more consistent with its proposal. Would a stronger team have made a difference in ANDA's performance? Probably only marginally, because there were a number of other contributing factors which were not under the control of the Contractor; the basic design of Component III was flawed; the management of ANDA was rather indifferent to the Project for the first two years; there were problems getting ANDA to accept USAID contracting rules; and there were different signals coming from USAID at different times about how to deal with ANDA.

In terms of Role (2), the institutionalization of improved procedures and processes in the implementing entities, the impact of the TA team was less than it should have been in the MOP. This seems to reflect lack of foresight by both the TA contractor and USAID.

The Project Paper and ProAg called for an advisor to work with AME. This position was left out of the LBII contract because there was an advisor working with AME who was financed from another USAID source. However, this advisor left in December 1991, and a TA replacement from LBII was not authorized until August 1993. Even then, there were continuing difficulties. The TA could not demonstrate properly the capability of the system proposed, and the LAN network which was essential for its operation was not purchased until April 1994. Why did LBII not get the supplier of the CFA system more involved? Why did neither the TA team nor USAID propose to send the key personnel in AME to see the proposed system in operation in the U.S. or elsewhere in the region?

The SIAMV system for road maintenance is also very complicated. Key DGC personnel should have been sent to see the system in operation elsewhere to be exposed to the advantages of the system, e.g., in making a case for adequate funding for road maintenance. This could have increased the support for the system, as the DGC engineers could have pushed to get it operational in addition to the TA.

Although there is still a question as to whether the CFA system will be fully integrated in AME or the SIAMV system maintained by DGC, it should be pointed out that a lot of Salvadorans received good computer training on a number of different software systems, and the management information

systems in all of the implementing agencies, with the exception of ANDA, have been strengthened. Similar achievements have been made with the accounting and financial management systems.

g. Conclusions about the Effectiveness of the Institution Strengthening Component

The first conclusion about the institution strengthening component is that it was flawed in concept; it called for strengthening of the wrong institutions, the yet-to-be-established management units (MU's). The creation of a new, temporary unit to implement a project is not an effective approach for the long-term institutionalization of an idea, concept, or program. It is highly optimistic to assume that a unit with temporary employees will be sustainable after the project ends.

Is the DGC MU an exception? Not really. Two factors contributed to the relative success of Component II: a) the Director General of Roads had good reason for wanting to see the Project succeed and gave it his attention; and b) he removed some of the MU's functions and gave them to his line divisions which had experience in, and responsibility for, carrying out these functions. In addition, the remainder of the MU was then used to facilitate the implementation of other USAID activities, i.e., under Project 519-0394.

The lesson would seem to be that it may make sense to create a coordinating unit (not a management unit) which will know USAID rules and will keep the books and monitor the end-use of commodities. However, the operational activities should be carried out by strengthening the existing operational units. TA should be provided to both the coordinating agency (MU) and the operational units, if needed. A USAID-hired liaison officer should be located in the MU and should work closely with the internal control unit and see that USAID is alerted to upcoming support needs of the operational units and/or the TA contractor. The liaison officer should be able to draft USAID PIOs and PILs and also be familiar with the Host Country Contracting rules and regulations.

If policy or local needs suggest that a management unit must be created, it is crucial to get the TA team on board at the earliest possible time, equipped and ready to go. This means having the PIO/T in process in the Contracts Office immediately after the ProAg is signed, <u>not</u> six months later. It means ordering vehicles immediately, so that they are available when the TA team arrives, not leaving the ordering for the TA team to do after it arrives in country. Similarly, some computers should have been ordered ahead. Finally, it means authorizing the TA contractor to begin procurement activities in their home office in tandem with the team's arrival in-country. This would help assure equipment use for Project start-up activities.

With so much contracting planned for Components I, II and III, it is surprising that a contracting specialist was not proposed in the original TA team or brought in when the new Host Country Contracting rules were handed down in November 1990.

Procurement processes, logistics and host country internal control systems are just as crucial as, if not more crucial than, technical factors in the successful outcome of projects. A lack of concern for them often leads to poor results, bad evaluations and audits, and declining credibility for the U.S. assistance program.

2. Project Support

This sub-component will look at the USAID role in supporting the Project in general and in relation to the hiring of Project Support personnel. The latter is all that is mentioned in the Project Paper discussion of Project Support.

a. Sub-Component Description

The Project documents call for USAID to contract five Salvadoran professionals and four expatriate Project Support personnel. It was anticipated that they would be housed in USAID to help it provide timely support to the Project, with one US PSC located in the Health Office and the others in IRD. The Education and Training office was expected to provide guidance on integrating health and sanitation education into the school curriculum and coordinate with the Ministry of Education in selecting schools to receive water and sanitation facilities.

The Project called for the TA contract to be competitively awarded directly by USAID. Representatives of ANDA and MOP were to participate in the evaluation of offers and the selection of the contractor. USAID was to approve the Contractor's Work Plan, including proposed training activities and commodity procurement.

b. Project Support Activities Carried Out

The proposed US PSC position for the Health Office was never approved; and the Health Office showed no interest in the Project until 1993. The Education and Training office did not participate significantly in the Project. Thus, the burden for managing all of the components fell upon the Major Infrastructure Division (MID) in the Office of Infrastructure and Regional Development (IRD).

At the time the Project was initiated, there was one US PSC in MID. She left in May 1990, and the position was vacant for eleven months. The person who came in April 1991 lasted three months. The position was again vacant until August, when the current incumbent arrived.

Another US PSC position was established to manage the WS&S Component in early 1992. The incumbent lasted only five months. In April 1992, a short-term USAID consultant recommended that there should be a person in MID who could speak for USAID in dealings with ANDA. This presumably would have to be a direct hire; in any case, another direct hire or US PSC was not brought on board. The number of FSN staff declined in late 1991 and early 1992, but was up to full complement by the summer of 1992.

The TA contract was not awarded until August 1, 1990, 11 months after the signing of the ProAg. This reflected a five-month contracting process, after six months was used to issue the PIO/T (signed February 25, 1990). Representatives of ANDA and MOP did not participate in the selection of the contractor.

As indicated in a previous sub-section, the winning contractor only fielded three of the eight people initially proposed and the qualifications of some of the replacements were significantly less than those originally proposed. None of these replacements served out their tours, and the first permanent chief of party was replaced at USAID's request.

Even with a very strong TA team in place, USAID still needs to be staffed sufficiently to stay on top of a project. Being staffed up at the beginning of the project is very important to get it off to a good start; unfortunately, this was not the case for this Project. It seems that USAID was always trying to catch up. Virtually none of the interim evaluation work was done. Much time was devoted to revising Action Plans and TA reports, rather than focusing on team building and planning with the counterparts and TA team to review and/or question basic assumptions and search together for solutions.

The new Deputy Director of IRD, who reported for duty in late 1990, began pulling people out of MID into a special unit reporting to him. This created confusion regarding responsibility for the project. This continued even after a permanent US PSC arrived in August 1991. In February 1992, the Deputy attempted to reorganize again and formally establish himself as the Head of the MID with the PSC as his Deputy. While this proposal was not approved by the Mission's senior management, it had a negative impact on progress and morale during the decision-making period.

Project 519-0320 seems also to have suffered at times from a lack of attention from the Director's office. There were periods when Action Plans and contracting documentation were submitted, rejected, and re-submitted before they were finally approved. Higher level management could have gotten issues resolved much more quickly with their involvement, but they apparently were too busy focusing on adapting the USAID program to the Peace Accords or other issues. Morale in the office suffered in mid-1992 because of perceived hostility from the Director's Office toward all of IRD. It was felt that the Director's Office was looking for an excuse to down-size or eliminate IRD because it was seen as a relic of the civil war which had outlived its purpose.

In sum, the level of USAID support proposed in the Project Paper was not provided, and the support which was provided varied dramatically during the life of the Project. It was particularly weak during the start-up of the Project, the time when it should have been strongest. The IRD/MID office was not fully staffed until the end of August, 1992.

3. Monitoring

a. Sub-Component Description

Monitoring is discussed in the Project Paper as part of the evaluation plan. The evaluation and monitoring expectations are set forth in PIL No. 3 of March 30, 1990. The Ministries of Health and Public Works, CEPA, CEL and ANDA were required to establish continuous monitoring programs and to share monthly, semi-annual and annual reports with SETEFE and USAID. The reports were to include progress, problems, solutions and the overall impact of all Project activities. The reports were also to include a budget performance section detailing the use of Project funds.

Similar reporting requirements were established for the TA Contractor. Thus, the implementing agencies, SETEFE and USAID were to have a considerable amount of data which they could analyze for their own monitoring needs.

b. Monitoring Activities Carried Out

Monthly reports were submitted by the MOP and ANDA, but the monthly reports from ANDA were only tables. In both the MOP and ANDA reports, the physical progress was given, but almost never in comparison with plans. The reports from the DGC got so big that an effort had to be made to get the size reduced, focusing more on the overall Project and less on each sub-project (particularly finished ones). This effort was not successful, because it would have meant convincing the accounting office to change its operations. Financial reports were submitted on the use of HCOLC.

The TA contractor submitted monthly reports beginning January 1991 (the first one covered October - December 1990) until July 1994. By then, most of the personnel had phased out according to schedule, and those who were left were involved in close-out activities. The LBII reports also did not provide progress against plans. They often repeated background material from month to month without so labeling it, making it time-consuming to find out what was new.

c. Conclusions about the Monitoring Activities

While monthly financial reporting may be considered necessary by the Controller's Office, monthly reports on physical progress approaches overkill. This is especially true when the reporting office repeats progress from the beginning as was the case of the DGC MU reporting and to a lesser extent by the TA contractor. Furthermore, the reports are of limited value if they do not account for progress in relation to plans. Routine reports should not be relied upon to get supporting action, but if the reporting office is pleading for USAID support, as the TA contractor did for a number of months in 1993, then USAID should respond immediately as to what it will or will not do.

4. Evaluation

a. Sub-Component Description

The elements of the Project evaluation discussion in the Project Paper were included as a Special Covenant in the ProAg and set forth in PIL No. 3 of March 30, 1990. It provides for the monitoring set forth in the previous sub-section. The monitoring reports were expected to constitute the basis for formal Project evaluations. The formal evaluations were to assess the status of the Project by periodically measuring:

- performance and adequacy of inputs;
- performance of the implementing agencies;
- progress toward output and goal attainment;

- impact of policy reform (both accomplished and still needed) on Project outputs and Project sustainability;
- distributional impact of the direct and indirect benefits of the Project, especially regarding employment and women; and
- income and health improvements.

Problem areas were to be identified, possible solutions discussed, and a timetable set out for resolving problems which occur.

Each of the Components was to be evaluated separately and at different stages of implementation, due to differences in the schedules of the three operational Components. Component III was to be evaluated twelve months after the start of the implementation of the Action Plans. This evaluation was to focus on the adequacy of the baseline data collected, the coordinating mechanisms between ANDA and MOH, and health education programs.

Component II was to be evaluated six months after the Action Plan had been approved and a small number of sub-projects had been completed, whether by both contract or force account, in order to judge the relative effectiveness of the implementing procedures generally, as well as the two methods.

Component I was to be assessed in the mid-term evaluation, and Component IV was to be evaluated both in the mid-term evaluation and, as it related to Component II and III, when the individual evaluations were conducted.

Comprehensive mid-term and end-of-project evaluations were to be carried out under USAID direct contract. These evaluations were expected to measure the success of the Project in meeting its purpose. Physical accomplishments, as well as processes for carrying out Project activities, were to be reviewed. The evaluations were to also assess: 1) the degree to which the implementing institutions had been strengthened and areas where improvement was still needed; 2) the success of efforts to sustain Project activities for the long-term; and 3) the economic and social impacts of the Project.

b. Evaluation Activities Undertaken

Neither the special evaluations nor the mid-term evaluation were carried out. There was only a brief revisit to the Component III program by a short-term expert in March-April 1992 and an in-house mid-term evaluation by the MOH of its Project 519-0320-supported activities. Given the number of implementation problems affecting the Project, it would have seemed logical to call for a broader evaluation of the Project at that time, or at least of Component III. The reason given for not doing so was the time which would have been involved in organizing the evaluation.

An additional problem was the fact that data collection systems were not put in place which would permit measurement of the last two items mentioned in (1) above.

5. Use of Contingency Funds

As shown in the table at the beginning of this section, contingency funds were $9.84 million in USAID funds and $8.52 million equivalent in GOES-owned local currency for a total of $18.36 million (13.6 percent of the total Project budget). This contingency was to cover unforeseen developments and inflation. The final financial data indicate that unforeseen events did occur, including a $11.1 million reduction in LOP funding which had to be covered.

E. Component V - Post-War Maintenance, Repair and Reconstruction

With the signing of the Peace Accords in January 1992, USAID decided to establish a Peace and National Recovery Project (519-0394) and to amend certain existing USAID Projects so that they would support the GOES' National Recovery Plan (NRP). Therefore, Project 519-0320 was amended to focus certain of the Project's activities on the NRP-designated ex-conflictive zones (115 of El Salvador's 262 municipalities) and to provide a minimum of $20 million (or equivalent) for this purpose. The $18.1 million assigned to this Component for activities which will terminate by March 31, 1995, plus an additional $5.65 million for continuing WS&S and health education activities under this Component (see Chapter IV), were to be used exclusively for support of the NRP.

At this point, the IRD/MID had to dramatically reduce its efforts on the Project with respect to the original goals and target areas. Instead, a full replanning effort had to be initiated and implemented in a very limited time frame, including an identification of sources and a reprogramming of funds.

Activity selection and the related development of activity budgets was a rather subjective process given the enormity of basic infrastructure needs in the ex-conflictive zones. First, the views of the implementing agencies were requested, i.e., what activities they believed were their top NRP priorities. USAID then made the selections, taking into consideration its views on NRP priorities, and established the implementing agency budgets.

The budget for Component V is shown in Table III-11, below.

Table III-11
Budget for Component V

IN MILLIONS OF DOLLARS EQUIVALENT

	USAID	GOES	TOTAL
ELECTRIC POWER - CEL	$ 3.93	$ 4.30	$ 8.23
RURAL ROADS - MOP	2.43	6.00	8.43
RAILROAD - CEPA/FENADESAL	.94	.50	1.44
WATER AND SANITATION - MUNICIPALITIES & U.S. PVOs/NGOs	5.65	-0-	5.65
TOTAL	$12.95	$10.80	$23.75

Table III-12, below, shows a comparison of projected and actual outputs for Component V's terminating activities (continuing WS&S and health education activities are covered in Chapter IV).

Table III-12
Projected and Actual Outputs
for Terminating Component V Activities

AGENCY	PROJECTED	ACTUAL AS OF 9/30/94	PLANNED AS OF 3/31/95
MOP			
RURAL ROADS	600 KMS.	379 KMS.	415 KMS.
CEL			
SUBSTATION RECONSTRUCTION	8	1	8
TRANSMISSION LINE REPAIR/RECONSTRUCTION	125 KMS.	88 KMS.	125 KMS.
DISTRIBUTION LINE REPAIR/RECONSTRUCTION	270 KMS.	122 KMS.	270 KMS.
CEPA/FENADESAL			
RAILWAY TRACK REPAIRED	78 KMS.	78 KMS.	78 KMS.
RAILWAY BRIDGES REPAIRED	10	10	10

Since the activities under this Component are similar to activities under Component I (CEL and CEPA/FENADESAL) and Component II (MOP), an extensive discussion of this Component is unnecessary and would only be repetitive of the preceding discussions of Components I and II.

All of this Component's terminating activities will reach their targets by March 31, 1995 or earlier, with the exception of rural road rehabilitation, which will have a 185 Kms. shortfall because this activity's budget proved sufficient for only 415 Kms. of the planned 600 Kms. of roads.

IV. PROJECT IMPLEMENTATION AND ACHIEVEMENTS OF WATER SUPPLY, SANITATION AND HEALTH ACTIVITIES UNDER COMPONENTS III AND V

1. Description

Project design provided for a five-year implementation period, relying on ANDA for the major implementation of water activities. However, in the design of Component III - Water Supply, Sanitation, and Health, and Component V - Post War Maintenance, Repair, and Reconstruction (added as part of NRP), a number of factors which subsequently seriously constrained Project implementation were unforeseen. The most significant of these were:

- The limited capacity, and perhaps motivation, of ANDA to undertake the work itself or to effectively administer contracts with private sector firms. ANDA failed to become an efficient regional organizational structure which worked directly with local community organizations in implementing WS&S activities, and as a result, they did not effectively implement the activities planned for it.

- The reluctance of the private (for profit) sector to risk their existing, but limited, equipment resources during the conflictive period and their hesitation to invest in new equipment as soon as peace was reached in early 1992.

- The lack of a U.S. PVO/NGO presence or interest in participating in the Project prior to 1993 because of the ongoing civil war.

The Project was amended in September 1992 to allow U.S. PVOs/NGOs and Municipalities not only to organize and train communities to improve their access to and properly use the WS&S systems, but also to undertake water system and latrine construction. Based upon a recommendation made at the Semi-Annual Review of November 1993 on Strategic Objective 4 - Healthier and Better Educated Salvadorans, a two-year extension for WS&S activities was approved in April 1994. The recommendation was based on the continuing need for clean drinking water in order to prevent diarrheal illnesses (the greatest cause of death in Salvadoran children under age five). Such illness is especially prevalent in the rural areas targeted by the Project. These activities are being accomplished under Components III and V of the Project by the U.S. PVOs/NGOs and Municipalities in cooperation with user participation.

The U.S. PVOs/NGOs, which receive direct grants from USAID/El Salvador, target communities throughout El Salvador including the ex-conflictive zones. Municipalities are also eligible implementors of WS&S activities and have received Project 519-0320 funds through the USAID-assisted Municipalities in Action (MEA) Program, using pre-existing financing and liquidation procedures. Priority has been given to funding U.S. PVO/NGO WS&S and health activities.

Communities are to be selected through a scoring system, giving priority to those communities demonstrating the strongest evidence of commitment. All construction activities are to be preceded, accompanied and followed by community organization activities to foster sub-project sustainability and health education activities to foster the proper use of the potable water and sanitary facilities in order to improve the health status of the rural populations receiving the sub-projects. ANDA is to ensure acceptable standards for construction of systems as part of their normative and regulatory functions. Special efforts are to be made to ensure that women form a large percentage of the membership of the water-user committees and that they play a key role in the decision-making processes at both community and household levels. The location and type of water supply is particularly crucial to women because it reduces the time they spend on water collection. Women enjoy the increased convenience of a safe, accessible water supply because they are responsible for the cooking, washing of clothes, and bathing of children. The time-consuming task of caring for a sick child is also reduced with a safe water supply.

The budgets and operational periods for Municipalities and U.S. PVOs/NGOs involved in WS&S and health education activities funded by Project 519-0320 are shown below in Table IV-1.

Table IV-1
Budgets and Operational Periods of U.S. PVOs/NGOs and Municipalities

NAME	GRAND TOTAL BUDGET	COUNTER-PART	TOTAL	OPERA-TIONAL PERIOD
CREATIVE ASSOCIATES INTERNATIONAL, INC. (CREA)	5.44	.55*	5.99	6/8/93-12/31/95
COOPERATIVE FOR ASSISTANCE & RELIEF EVERYWHERE (CARE)	4.72	.30 + in kind	5.02	9/14/93-9/30/96
PROJECT CONCERN INTERNATIONAL (PCI)	2.77	.96 + in kind	3.73	7/20/94-9/30/96
MUNICIPALITIES	.96	IN KIND	.96	1/93-9/30/96
TOTALS	**13.89**	**1.81**	**15.70**	

* Represents in-kind contributions from communities.

The expected Outputs of the U.S. PVO/NGO WS&S activities are found below in Table IV-2.

Table IV-2
The Outputs Expected of U.S. PVOs/NGOs' WS&S Activities
(By September 30, 1996)

OUTPUTS	CREA	CARE	PCI	TOTAL
A. ESTIMATED NUMBER OF BENEFICIARIES	25,600	26,000	37,000	88,600
B. ACTIVITY				
REHABILITATION OF HAND DUG WELLS	164	160	200	524
NEW WELLS	32	85	148	265
HAND DUG	(28)	(78)	(100)	(206)
DRILLED	(4)	(7)	(48)	(59)
CONSTRUCTION OF NEW WATER SUPPLY AND DISTRIBUTION SYSTEMS	9	5	2	16
CONSTRUCTION OF LATRINES	3,969*	2,950	3,024	9,943*
HOUSEHOLD	(3,960)*	(2,950)	(3,000)	(9,910)*
PUBLIC	(9)	-0-	(24)	(33)

* Includes 1,346 repaired.

The output for Municipalities was to be 125 WS&S municipal sub-projects in communities with populations of around 2,000. In fact, there were sufficient funds for only 36 municipal sub-projects with total beneficiaries estimated at 82,800. This increases the total estimated beneficiaries under PVO/NGO and municipal sub-projects to 171,400.

2. Component's Implementation History and Achievements

a. Role of USAID

The WS&S activities discussed in this Chapter were established at the insistence of USAID. The funding of the U.S. PVOs/NGOs is provided directly by USAID. The municipalities receive funds from the Secretariat for National Reconstruction (SRN), which in turn receives these funds from USAID.

The management within USAID of all WS&S activities passed from IRD/MID to the Office Health and Education (OHE) on October 1, 1994. This was a desirable change, since the objective of WS&S activities is primarily improved health. Since the U.S. PVOs/NGOs operate under USAID Cooperative Agreements, there is substantial involvement by USAID in the PVO/NGO operations, i.e., USAID monitoring and a requirement for USAID approval of many implementation decisions.

OHE should strengthen the linkages of WS&S activities with the other health-related USAID projects, such as Maternal Child Health and APSISA. An integrated approach at the community level under the rubric of primary health care would help establish the progress made so far in changing knowledge, attitudes and practices related to water and excreta disposal.

b. Appropriateness and Effectiveness of Implementing Agencies

The three U.S. PVOs/NGOs with USAID Cooperative Agreements to carry out Components III and V are Creative Associateos International (CREA); CARE (Cooperative for Assistance and Relief Everywhere); and Project Concern International (PCI). It will be important to observe their effectiveness in community organization, achieving participation, including of women and children, and sustaining benefits, especially health. CREA began the second phase of implementation in October 1994 and CARE in December 1994, and PCI began its first phase in July 1994. Clearly, the start dates of their Cooperative Agreements varied, but so did their content (see Table IV-1). Even though there are many similarities in their approaches, there are also striking differences in their relationships with MOH and ANDA, and interestingly, in their methodologies and techniques for community organization and health education activities, as well as their interpretations of or reactions to their Agreements.

For example, CREA is training its own facilitators whom it perceives as supplementing the work of the MOH "promotores de salud", whom CREA believes are "spread too thin." They are sharing information with the MOH promoters in a very informal way, with variance from community to community. All of CREA's facilitators, who live with families in the communities Monday through Friday, are working directly with the people.

CARE, at the community level, is working primarily with the Inspector de Saneamiento Ambiental from the MOH. In its report "Proyectos Actuales en El Salvador" (p. 5), CARE notes that Health Education "will be carried out through local health committees in coordination with MOH and with school children in coordination with MOE."

PCI, on the other hand, has as its Director of Health, América Ramírez de Duarte, an MOH employee with a two year leave of absence. She is working closely with the Promotores de Salud, hoping to give them intensive training in WS&S health-related activities for use in the communities. Her feeling is that the promoters will gain prestige and so be able to bring about behavioral changes needed to improve health through proper use of improved WS&S facilities.

In interviews with the Evaluation Team, CARE and CREA indicated their effectiveness had been greatly limited by the shortness of their initial Phase One (July and September 1993 to October and

December 1994 respectively) time frame for planning and implementation. The development of full community participation, including that of women (the key actors and stakeholders), before most of the latrines and/or water systems had been completed, was not possible.

Another constraint to effective implementation, which all three U.S. PVOs/NGOs commented on, was the fact that promotion and partial implementation had been started by the MOH and ANDA promoters and contractors before their Agreements were signed. Hopes had been falsely raised in a number of communities. In others, hardware (in some cases inappropriate or defective) had been installed without the necessary software; including consulting, education, discussion, and organizational adjustments which define community participation and the proper and effective use by the community of the water and sanitation facilities.

A further constraint, mentioned by a USAID staff member, was the suddenness of the introduction of U.S. PVOs/NGOs into the WS&S sector in June 1993. As he said, "Both ANDA and the Ministry of Health felt threatened by the abruptness of the introduction of the PVOs/NGOs ... They didn't understand that the PVOs/NGOs had come to help them. Some promoters even received direct orders from the MOH not to cooperate. The MOH felt that it had done the hard work and now the PVOs/NGOs would get the credit."

The timing of the Agreements and the start dates of the sub-projects among the various U.S. PVOs/NGOs will certainly impact the effectiveness of the implementation and, perhaps, the final evaluation of appropriateness. CREA, the first U.S. PVO/NGO to begin operation, felt that it had been assigned by USAID to complete some (in fact, a large number of) unfinished problem sub-projects left from the ANDA debacle. During Phase One, their sub-project sites were very dispersed, from one end of El Salvador to the other. (During Phase II, CREA has been asked to start new sub-projects only in the western zone.) CARE, on the other hand, opened a regional office in San Miguel to coordinate its field work which was concentrated in the eastern zone. PCI, which is just beginning implementation, has been assigned the central and paracentral zones.

The team found that all three U.S. PVOs/NGOs have been amazingly effective based on a review of their written progress reports, staff meetings, and field trips to obtain first-hand information from the beneficiaries. However, it is much easier to obtain statistics on the number of water systems and latrines installed than on proper usage and benefit sustainability. The latter depends on community organization now and changing knowledge, attitudes and behaviors over time.

The present success of the U.S. PVOs/NGOs is due largely to the flexibility they have in decision-making and in reacting to changing field conditions. In spite of the unfinished, poorly designed, and broken down systems which were assigned to them, the U.S. PVOs/NGOs have been able to accomplish more in eighteen months than the Project was able to accomplish through ANDA in five years. Several of the engineers implementing the PVO/NGO programs formerly worked for the ANDA-MU. The main reason for their increased effectiveness are the management systems under which they now work.

Another reason for the success of the U.S. PVOs/NGOs has been the fact that they have been given responsibility both for the engineering aspects and the community organization and health activities of the sub-projects. Even though the coordination of the input of software and hardware has not been ideal, the U.S. PVOs/NGOs have maximized cooperation of their staffs with the MOH and other agencies at the field level. Most importantly, they have organized and trained the local water and health committees and worked with the users themselves. Several of the community organizers and health educators working with the U.S. PVOs/NGOs had training under Project 519-0320 in MOH workshops. Others have had experience with other projects or U.S. PVOs/NGOs such as Save the Children. The field promoters are a very impressive group, excellent "trainers of trainees." The expatriate staff of all the U.S. PVOs/NGOs have extensive experience in WS&S in developing countries.

Under the MEA program, municipalities have proved to be effective builders of water supply systems. The municipalities, with TA available from the SRN and IRD/RUD, are appropriate and effective implementing agencies for infrastructure improvements.

c. Appropriateness and Quality of Inputs

The engineering and construction inputs observed are judged adequate and proper for the circumstances. Where appropriate, ANDA standards are being used for water storage tanks, but some ANDA standards have been deficient for construction in an earthquake zone. Those have been analyzed structurally and reinforced by the USAID Project Manager, a senior structural engineer with good competence in earthquake resistant design. ANDA approves system designs.

PVC pipe in smaller diameters (below 4") is thin wall pipe. It is adequate for the pressures encountered in the small PVO/NGO projects, but may be subject to mechanical damage unless carefully bedded in proper soil free of rocks and stones. This characteristic was discussed with the USAID Project Manager and some of the PVO/NGO supervisors in the field. They demonstrated an understanding of the problem. Constant and close supervision of field crews during the pipe laying phase of the work is urged.

d. Effect of Commodity Management on Implementation

Commodity management under this extension would become a problem only to the extent that ANDA may use for other purposes commodities reserved for the PVOs/NGOs. This has occurred already in a small way and is being resolved, but if expected commodities are not in the warehouse when required, implementation will be interrupted.

e. Major Implementation Impediments and Related Adjustments

Based on performance to date, no insurmountable impediments are anticipated in the engineering and construction of water systems and latrines. If a community does not demonstrate commitment and cooperation, it should be dropped from the program. With the communities working wholeheartedly with the U.S. PVO/NGO in their area, most field difficulties can be overcome.

A possible hazard to this Project is common to PVO/NGO water projects everywhere; sustainability after departure of the PVO/NGO. The PVOs/NGOs are helping the communities organize their operations and management structures, and expecting to leave an operating management unit in place. Most organizational systems will operate well until they meet a major technical problem. And all systems eventually develop, relative to small communities, a large and expensive technical problem sooner or later. The local water system management structure then must turn to a higher authority for TA, and in some cases, emergency financing

The GOES has yet to develop a higher authority to whom a local water commission, municipality or other operating entity can go to receive assistance in the form of grants, loans and construction/repair expertise. A change in the organic law for ANDA could designate ANDA as that authority, or some other agency might evolve. But unless such an agency exists, many of the PVO/NGO built systems will be inoperative in five to ten years (or less), as was the case with the PLANSABAR systems which were built some years ago.

f. Mid-Course Changes in Implementation

The addition of the U.S. PVOs/NGOs and municipalities was itself a large mid-course change in implementation. No further changes are anticipated except possible closer coordination with USAID's Municipal Development Project.

g. Related Other Donor Assistance

The other primary donor active in the small water supply sub-sector is the IDB (through loans to FIS). The FIS program is discussed in Chapter III.

3. Validity of Project's Original Design and Assumptions as They Relate to Component V

As discussed in Chapter III, most of the original design and assumptions proved invalid in part or in their entirety. Those deficiencies thus gave rise to the elimination of ANDA as an implementing entity and the addition of the U.S. PVOs/NGOs and municipalities as implementing agencies. This also led directly to the two-year extension of the WS&S sub-sector under Components III and V.

The needs of the rural population and their willingness to commit themselves to the implementation of sub-projects in their communities were not underestimated. The experience of the PVOs/NGOs to date reaffirms that the people appreciate the value and convenience of potable water and sanitation and are willing to work to make them available as long as there is a firm prospect of success.

To date, the implicit assumptions that PVOs/NGOs could and would work with the people and that they could and would develop serviceable community water systems and latrines are proving valid.

4. Recommendations to USAID, the PVOs/NGOs, Municipalities and the Host Government

(a) The work and financing of the U.S. PVOs/NGOs should continue and should be expanded and extended if possible. Improvements in WS&S are, as they were when Project 519-0320 was authorized, some of the highest priority health interventions possible.

(b) To achieve the objectives of the Component, USAID should continue to monitor the design and construction of Project WS&S activities and pay special attention to the health education aspects and community organization and management systems. The Municipalities in Action and the Municipal Development programs probably can and should assist in the community organization efforts.

(c) The GOES should institutionalize by suitable legislation a national organization or organizations to make available appropriate technical assistance, policy guidance, and sources of financing, by both grants and loans, to water system managements and small municipalities.

(d) All water committees, commissions, cooperatives, management entities, etc. should be so organized as to come under cognizance of the municipal government for oversight and guidance, whether or not the system is actually operated by the municipality. As the elected official closest to the people, mayors are the first place a system's manager should look for assistance. When water officials do not get results, they can point out their problems to the voters at the next election. The relationship of the municipalities to independent systems should be set forth clearly in appropriate legislation.

(e) The design of USAID's proposed Social Sector Reform Activity should recognize that effective WS&S interventions are important to lowering morbidity and mortality from diarrheal diseases, therefore, reducing the case loads at regional health centers and hospitals.

V. SUSTAINABILITY OF PROJECT BENEFITS BY IMPLEMENTING AGENCY

There are two types of sustainability questions which need to be reviewed: a) Are the physical outputs of the Project going to be maintained and/or the new systems sustained and utilized?; and b) Is there a system or organization committed to continuing and expanding the activities funded under the Project? Both questions are reviewed in relation to the outputs of each of the principal implementation agencies.

A. DGC and AME

Project 519-0320 benefits were twofold: a) maintaining the main trunk roads, with Component I assistance; and b) rehabilitating rural roads, including those in the ex-conflictive zones after the Peace Accords, with Component II assistance.

The main trunk roads have high visibility and are essential for the shipping of principal and export goods. It can be assumed, therefore, that political interests will insist that the main road system is kept in reasonably good shape. Traditionally, external assistance has been available for improving and expanding this system of roads, e.g., from the IDB and CABEI (Central American Bank for Economic Integration).

The rural roads rehabilitated under the Project would not normally have the same priority when budgets are drawn up. There is also a tendency to use available resources to rehabilitate additional segments of road rather than maintaining the ones which already have been rehabilitated. The current level of maintenance of the rehabilitated roads is very inadequate and should be increased substantially. USAID and other donors should encourage the GOES to take the following actions in order to create and continue such an increase:

- Increased funding - This could be obtained by: a) accepting that the gasoline tax is a user's fee and should be invested as such; and b) distributing the gasoline tax receipts equitably between national and municipal roads, even though the latter are a municipal government responsibility.

- Develop an increased level of equipment maintenance to reduce the deadline rate to 20 to 25 percent from the present 40 percent. This will require additional funding for AME, improved and faster procurement procedures for spare parts for vehicles and equipment, and improvements in operations at AME (see III.B.6).

- Develop private contracts for approximately 75 percent of required road maintenance; the DGC force account activity cannot and should not meet the need. A shift of this magnitude will require up to five years and a carefully prepared plan. Implications for the size of the DGC work force levels and the mix of skills in DGC are enormous. The GOES may need to initiate an employee buy-out to encourage sufficient retirements to avoid a formal reduction in force

(RIF). The GOES might seek external financing for such a program, which has been done in other countries, as it would decrease greatly the future unfunded liability on the government employee's pension plan.

- Better utilization of the external resources made available for road rehabilitation and maintenance. As pointed out in Section III.B.5., allowing loan funds to be used at the rate of $114,000 per kilometer for rural road rehabilitation is not a wise use of funds when the number of kilometers of roads needing rehabilitation and maintenance is so great.

- Maintenance and use of the SIAMV system for budget forecasting and management of the multiple maintenance activities.

Without most of these changes, rural unpaved roads will deteriorate rapidly.

Project 519-0320 has strengthened the DGC's capability to plan and manage road rehabilitation and maintenance, including the use of contracts. If the Directorate maintains the SIAMV system, it will be able to present an excellent case for increased budgetary resources as well as having a strong tool for managing the maintenance program. Similarly, AME is in a much stronger position to ensure that DGC's vehicles and equipment have a longer life and are dead-lined less frequently, particularly if it fully integrates the CFA system.

Whether DGC will be given the directives and funding necessary to carry out the program described is an open question. The natural proclivity of central governments is to lose focus on lower class rural roads unless they are in a highly productive area or related to national security. Therefore, if needed activity is to be obtained, it will probably be necessary for the Mayors, acting collectively through their association (COMURES), to focus on the road situation. They need to focus not only on the rehabilitation and maintenance of the class of rural roads which were benefitted by this Project; they also need to get the central government to focus on the problems of the Caminos vecinales and formulate a mechanism to deal with the problem.

Because of the tremendous backlog of needed rehabilitation of rural roads, including Caminos vecinales, resulting from twelve years of internal strife, the GOES will need to obtain considerable external assistance to finance such an ambitious program. To increase the chances of obtaining the level of funding needed, it may need to demonstrate that the capability is in place to finance and manage a much larger maintenance program. Thus, the strengthening of DGC and AME could potentially be very helpful to the GOES, particularly if the systems provided under Project 519-0320 are fully integrated. The GOES also needs to focus on means for creating capabilities in the Municipalities to rehabilitate and maintain the Caminos vecinales.

B. ANDA and Municipal/Community Water and Sanitation Systems

It is still too early to predict what is going to happen to those systems and/or wells which have been constructed or rehabilitated under the Project. One of the criteria for agreeing to a sub-project was that the community, in a series of meetings with MOH health promoters and ANDA water

promoters, had completed the following steps: a) chosen a water committee to represent them; b) made a commitment to pay monthly fees to receive the water which would be sufficient to operate and maintain the system; c) approved a system for collecting and accounting for the funds received; and d) either accepted or assigned responsibility for ensuring the operation and maintenance of the new or rehabilitated system.

While this process of community involvement appears to be working well in the sub-projects now being implemented by the U.S. PVOs/NGOs, questions have been raised about how well the system worked during the earlier phase of the Project when ANDA contractors built or rebuilt systems and dug wells and ANDA regional personnel rehabilitated hand dug wells. There has been no systematic review by the Project of the functioning of these new or rehabilitated systems, and the evaluation team did not have enough time to carry out this review.

The team did hear that some of the ANDA-constructed systems/wells were arranged without community involvement in the choice of service levels or options, or even in the decisions about the location of stand pipes or wells. Community participation was often limited to the labor required of the community to lower costs. Apparently, communities were often not involved in the projects from the beginning, were not encouraged to organize or participate actively. There are reports that facilities were placed on land without the owner's permission.

Although there were extensive discussions with communities by the MOH health promoters, the communications system appears to have failed, or at least faltered, when it came time to actually build the water system. The evaluation team has included elsewhere a recommendation that USAID should arrange for operations research with community participation (participatory research) on the functioning of the ANDA-emplaced systems. This research would serve two very important purposes: a) identification of any problems which might exist, allowing for corrective action before the systems go into disrepair and the communities are back in the same unhealthy circumstances; and b) providing useful information which can be fed back into the on-going activities of the U.S. PVOs/NGOs. The terms of reference for this participatory research activity is included in this report as Annex I.

As to the second basic question, there is no system or organization committed to continue and expand the provision of potable water systems in rural areas. PLANSABAR in the Ministry of Health no longer builds new systems and has a poor record of managing the ones which it has built. The current ANDA President is talking of extracting ANDA from retailing water and concentrating on wholesaling, i.e., turning ANDA systems over to local ownership when the local community is ready, with the latter paying monthly fees to ANDA, presumably to help amortize the investment. The three U.S. PVOs/NGOs are carrying out activities under Project 519-0320 Cooperative Agreements; while the systems they build may be maintained, this is not a sustainable program because there is no assured source of finance for new or expanded rural systems after USAID funding is gone. IDB is also funding new water systems, but generally for communities larger than those covered under Project 519-0320. Furthermore, the track record for maintenance of IDB-financed systems is reported to be very poor.

The creation of a sustainable program for providing and sustaining rural and small municipal water systems will require a program which includes the following:

- Establishing legal status for water system ownership at the local level, including definitions of legal duties and the responsibility of water committees, commissions, cooperatives, authorities, etc. and their relationships to various levels of government, especially mayors and municipalities. There is need for an expanded educational effort to inform communities of the possibilities which exist under current legislation.

- A central government authority responsible for providing policy direction and standards for local water systems, regardless of the type of ownership and management. Hopefully, the new Rural Development Division of ANDA will perform this function.

- A source for TA, including servicing and repairs, perhaps on a reimbursable basis and with financial assistance by grant or loan in times of true emergency. This item is critical to long-term survivability of local self-sustaining water systems.

- A decentralized (regional) system of supplying spare parts and major repairs. When water systems become commonplace, the private sector will be providing this service. In the interim, this and the previous item might be provided through a special unit established by the mayor's association (COMURES).

- Regional and national professional associations of water system managers and/or committee chairpersons. These types of associations provide a way to: a) learn from the experience of others; b) try to identify upcoming economic, social and technical changes in the water utility business; and c) influence industry changes and create opportunities to use them for the benefit of water system customers.

- An integrated health-water-sanitation approach to planning and implementation, regardless of overall funding sources.

One of the objectives of Project 519-0320 was to combine water and sanitation in Component III. There was a strong attempt to synchronize the health education message on the proper use of water and sanitation with the water development activities. MOH reports a highly effective utilization (72%) of the latrines built under the Project. The evaluation team feels that a follow-up review is needed of the systems using a different methodology than that used in the MOH survey.

The team has recommended elsewhere participatory research as the appropriate methodology. This research should look at the functioning of the water systems, the effective use of the sanitation facilities, and the proper (or effective) use of water. In addition, there should be a review of health data in the communities receiving new or improved water and sanitation facilities and the correlations made between the health data and the results of the participatory research.

Current methodology suggests that primary health care, water development and use, and sanitation should all be integrated into a single program. It is difficult to see how this can be carried out under existing structures and systems in El Salvador, although FIS representatives have indicated that they are planning to do so under the new IDB-financed program. They also suggest they will be using U.S. PVOs/NGOs for some program implementation, e.g., community organization and health education, and plan to integrate MOH health promoters into project activity. It would seem appropriate for USAID's proposed Social Sector Reform Activity to fund one or more pilot projects to test one or more versions of a health-water-sanitation integrated approach in El Salvador as well study the results of the FIS-sponsored activities.

C. CEPA Agencies

The bulk of Project 519-0320 assistance to CEPA agencies (railway, port, airport) was through Component I, i.e., the purpose was to help them to maintain vital services during the war. In general, one can assume that these agencies will get the funding needed to keep them operating. It is also possible that some of them might be privatized. Specific comments about each is provided below.

FENADESAL

Sustainability of the railroad will depend on its ability to compete successfully for enough of the national freight traffic to make it financially viable, assuming that the GOES is unwilling to continue subsidizing it at the current level of ¢20 million.

To compete successfully, FENADESAL will have to rehabilitate track, i.e., to replace ties and ballast, on much of the road. A national Intermodal Transportation Study now in progress (funded by USAID) should provide valuable conclusions and recommendations in that regard by mid-1995, and no effort should be made to prejudge or anticipate the study results.

Although it has been reducing personnel levels slowly and steadily for the last few years, the railroad does have the technical competence to be a viable institution. It also owns an old but very competent central shop which might help sustain itself by doing specialized work for other government agencies or the private sector.

Comalapa Airport

The airport received relatively minor assistance in the form of equipment. The capability exists to maintain the equipment, and the need to maintain certification for international flights provides the incentive to management to ensure that the equipment is operational and meeting at least minimum standards.

Acajutla Port

The weight handling equipment, pier repair, and computer equipment and systems provided to the Acajutla port are essential to maintaining a high level of international trade. It is expected, therefore, that these items will receive enough maintenance to ensure they can perform their functions.

The pier repairs are not complete, and a design change to add additional timbers is badly needed. It is assumed that the additional work will be done by contract change order before the existing work is damaged. Otherwise, much of the pier repairs to date will be unsustainable and will be lost quickly.

D. CEL

The Project 519-0320 contribution to CEL was primarily by funding commodities through Component I to permit CEL to maintain service in spite of receiving numerous attacks during the war. Because electricity is so important to the economy and such a politically sensitive public service, it is reasonable to assume that the transmission and distribution facilities restored, replaced and rebuilt under the Project will be maintained in serviceable condition. The health of CEL as an organization, and electric power as a sector, will depend on the rationalization of rates and revenues. Meters provided by the Project made a significant contribution, which has been enhanced by recent and proposed rate increases.

In the post-war period, the economy is expanding at about five percent per annum. Thus, the demand for electric energy can be expected to rise rather rapidly. Concurrently, there is considerable latent, unmet demand. Furthermore, a number of the power plants are getting old, and reserve capacity is practically nil. Clearly, a major investment in the power sector will be required soon.

CEL is expected to receive large investments in planning and construction of new generating capacity, including geothermal generation, from international funding institutions, including the IDB. As a condition for that financing, CEL will likely be required to bring its organization, staffing and tariff structure more closely in line with accepted commercial practice.

Legislation is in process which will permit the private sector to become more involved in meeting the expanding needs for electric power. One private sector investment in new generating capacity was initiated in August 1994. The private sector may be invited to take over some of the existing power distribution and transmission systems. El Salvador, like many other Latin American countries, is finding that the international financial institutions simply cannot come close to meeting the investment requirements of their electric energy sector.

VI. OVERALL PROJECT IMPACT

The evaluation team made an unsuccessful effort to construct a chart of Project achievements in a Logical Framework format. Three factors inhibited the preparation of the chart at the goal and purpose levels: a) some of the objectively verifiable indicators (OVI's) are vague, and/or not objectively verifiable; b) the surveys and studies which are required for the "means of verification" were not performed; and c) the Logframe was not revised in early 1992 when the civil war ended.

At the output level, the picture is mixed: a) in Component I, USAID has informally adapted a whole new set of easy-to-measure indicators, which have little relevance to impact; b) in Component III, some new, easy-to-measure indicators have been added, while some old indicators have been dropped; and c) in Components II, IV and V, the indicators being measured generally are the official indicators. The output indicators currently being used by USAID are those which have been included by the team in the relevant sections of this report.

> **RECOMMENDATION:** USAID should prepare a new Logical Framework for the water supply and sanitation activity for the remaining eighteen months of the Project.

After realizing that the Logical Framework indicators were inappropriate and that necessary data had not been collected, the evaluation team tried to make some judgments about what could be claimed as impacts. The Project has had a number of positive impacts:

- Component I activity permitted the continuity of utility and transportation services during the war which helped preserve the national economy and the livelihoods of persons working in the industrial and commercial sectors of the economy. The continued availability of these services made possible an economic climate which attracted foreign investment even before the Peace Accords. Maintaining these services also had a positive effect on the quality of life of many Salvadorans.

- Activities under Components II and V will have resulted in the rehabilitation of over 1,200 kilometers (or 15 percent) of rural roads by March 31, 1995, of which one third will have been accomplished in the ex-conflictive zones during the last two years. While this is less than originally targeted (the goal was 20 percent), it clearly has had a significant impact in the rural areas, especially in the depressed ex-conflictive zones. Other specific impacts include:

  - An immediate direct impact is that traffic has been restored on hitherto impassable roads. Buses are seen running on roads, which until recently, were traveled only by trucks at slow speed and at considerable expense. The impact on mobility and market access is easily observed. Thanks to Project 519-0320, roads on the national network which were closed as recently as a year ago are now open.

- The road construction activity also fostered an expanded in-country capability for road rehabilitation and maintenance. The number of qualified contractors increased from six in late 1991 to forty-six at the height of construction, thus permitting the Project to expand quickly into the ex-conflictive zones after the Peace Accords were signed. The Project has also demonstrated the ability of the DGC to manage a sizable program of rehabilitation and maintenance in the rural areas. This expanded capability has helped pave the way for the forthcoming road rehabilitation activities now being funded by the Inter-American Development Bank (IDB).

[The successful rehabilitation of rural roads also points out the importance of increasing substantially the funding for road maintenance and the need for the DGC to expand its road maintenance by contract - see the Sustainability discussion in Chapter V, Section A.]

- ANDA activities under Component III have resulted in 100,000 rural residents acquiring, or re-acquiring, access to an adequate source of potable water. While these results are considerably less that planned, the final Project results will be significantly increased as a result of the activities of the U.S. PVOs/NGOs and municipalities under Components III and V which continues until September 1996. Their actions are expected to benefit an additional 171,400 people.

- As with the road activities, Component III and V activities are also expected to serve as a catalyst and example for the expanded activities of the IDB. Because of research carried out under Component III on latrines and the subsequent success in community acceptance and use of them, FIS is going to once again build latrines in conjunction with their water supply activities. FIS and others now appreciate the ace of integrating health and sanitation with the provision of water. They have also seen the value of the local water committees and the willingness of local communities to take responsibility for operating and maintaining their improved water systems. Project 519-0320 has also demonstrated the availability of substantial local contract well-drilling capability.

- There are no health impact data available for the communities with new or improved water systems and latrines. In fact, it is probably too early for such data, if it were available, to show any trends. In the communities visited by the team, however, there was a strong feeling among beneficiaries, especially mothers, that their children are getting sick less frequently. More than half of the families visited commented that with safe water and latrines, they would all be healthier. If nothing else, this indicates that the MOH health promoters have been effective in bringing health messages to the community. This is borne out by the fact that Health Committees are actively involved in promotion campaigns in the homes and schools and have been able to see that improved latrines and water points were made available at the schools.

- The early resistance to the use of composting latrines (aboneras) has been largely overcome with more adequate orientation and education about them. A recent MOH report suggests a 72 percent level of proper or effective use of the abonera latrines constructed under Project 519-0320. CREA has reported 95 percent effective use in one community. Field observations by the team in six communities confirm regular and frequent use of latrines: there are worn foot paths leading to them; carefully tended flowers are growing around them; and in some cases, wooden banisters have been added to them so that the elderly and children can access them more easily. The interiors were clean, in some cases brightened with MOH colorful posters with instructions for use, and the ash containers handy for use.

  [One possible negative impact could come from having to empty the excreta too soon. Several families told the evaluation team that their latrines were filling in three or four months, making the curing time only six to eight months. This is generally assumed to be too short a time for safe use, although the MOH has told communities that eight months is acceptable. Both CREA and CARE are monitoring their installations to find out if less ash can be used or if the chambers are too small.]

- Another impact of the water supply and sanitation activities has been the strengthening of local groups at the community level. This is reflected in the participatory nature of the interventions, including the involvement of women as key actors in their communities during planning, implementation, operation, maintenance and effective use of the facilities. The evaluation team was impressed with the knowledge of the members of the local water and health committees as well as individuals in their homes. All were willing and anxious to talk about the new (or improved) facilities and to make recommendations for follow-up actions.

  [Most of the team visits were to communities which have benefited from PVO/NGO activity, because this activity is still on-going. It is possible that the strength of the local groups may not be as great where the facilities were constructed or rehabilitated by ANDA contractors. The LBII monthly reports indicate that MOH promoters made a deliberate effort to work with those communities during and after the contractors' work. Nevertheless, it is important that the current situation in those communities be reviewed as soon as possible to verify results, and if appropriate, provide feedback to the U.S. PVOs/NGOs currently carrying out sub-projects. In Chapter V, Section B, the evaluation team has discussed requirements for sustaining meaningful WS&S activities after the Project is completed.]

- Component IV activities have strengthened the management capability of the DGC (as discussed above) and the AME. USAID funded the establishment of AME under a previous project and provided it with support under both Components II and IV of Project 519-0320. AME is now effectively servicing the vehicles and heavy equipment of the Roads and Urbanization Directorates. AME's personnel are fully funded by the GOES regular budget, in contrast to 100 percent on the extraordinary budget at the beginning of the Project. To achieve its potential, AME still needs additional funding for equipment and specialized vehicles, a better physical set-up in San Miguel, and a more flexible system for small procurements. Nevertheless, it has come a long way and has become a strong institution.

- The impact on employment generation by the Project has been significant. No employment records are available directly, but funds spent for salaries can be estimated as a percentage of costs, using experience from similar work. Using this approach, it is estimated that the Project generated approximately 18,300 person years of work directly on the performance of sub-projects, assuming 40 percent of direct cost as local labor at ¢50 per day. With an indirect multiplier of about 2.5, the indirect employment generated in other parts of the economy would be about 40,000 person years. The team was unable to find any way of disaggregating the data by gender.

- The training provided to individuals, especially in the Management Units, has developed skills which are readily marketable in the private sector, as evidenced by high turnover in some Components. Thus the Project has been career enhancing for some individuals and has made a small contribution to the productivity of the economy.

- The DGC Management Unit developed managers which are of considerable value to the DGC. A former manager of the MU has been named the manager of the much larger highway and road program funded by loans from the IDB, CABEI and Japan. A deputy manager of the MU has been named a deputy to the acting Director General. Thus, it appears that systems and processes which proved effective in the MU may be adapted to other parts of the DGC.

- After the war, Component IV support was provided to CEL and CEPA to improve or expand their computer systems and to improve warehouse management. CEPA communications with its subsidiary organizations have been substantially improved. The Acajutla port is more efficient in managing port operations.

- This Project has also highlighted the need for change in GOES organizations and methodologies which are responsible for assuring the delivery of public services to rural areas and small municipalities. Specifically:

  - It has been demonstrated that no national entity is assigned, accepts or feels responsible to support independent municipalities and rural water committees in the development and maintenance of small water systems. Operation and maintenance of water supply systems should be a local responsibility, but local groups need TA and funds for initial construction, whether by loan or grant. So far, these services are being provided by independent ad hoc organizations, such as the National Reconstruction Secretariat (SRN), FIS, and the PVOs/NGOs, with outside funds (USAID and IDB). This function needs to be institutionalized and funded from national sources.

  - A similar problem exists with funding for road maintenance. As noted elsewhere in this report, new funding and management mechanisms must be found if the recent investment in road rehabilitation is to be protected.

VII. LESSONS LEARNED

1. **The more complicated the implementation arrangements of an activity, project, or sub-project, the higher the risk of implementation failure.** One reason Component III WS&S activities failed was that prior to U.S. PVO/NGO and municipality involvement, there were too many parties involved and the inter-institutional and intramural timing and coordination requirements were too great. Moreover, this Component probably should have been a separate project as was proposed by IRD in the design stage (it was folded into the larger Project merely to reduce the number of projects in USAID's portfolio). If it had been a separate project, then perhaps it would have received the increased attention it so clearly required early in its implementation period.

2. **PIOs for services or commodities which are critical to initiating implementation and/or allowing implementation to be successful should be issued immediately following the signing of a Project Agreement.** Conditions Precedent to disbursements can be, and often are, waived for USAID direct contracts and procurement. While the ProAg for Project 519-0320 was signed on August 30, 1989, the PIO/T for the contracting team was not issued until February 25, 1990, causing a six month delay in the start-up of various activities. Moreover, vehicles for the TA team were not ordered until after the team arrived (13 months into the Project), resulting in reduced mobility and high cost car rental for a number of months. These were unnecessary Project implementation costs, delays and impediments.

3. **Large and complex Projects, especially those with serious implementation problems, require strong management.** A major reason that Project 519-0320 did not begin to make strong progress until 1992 were the organizational and staffing problems within IRD which existed for an extended period. Through 1991 and early 1992, there had been numerous staffing changes and position vacancies and a Project management structure which did not give the Chief of IRD/MID the authority or support needed to do his job. Not until early 1992 was IRD/MID given a strong mandate to manage the Project; even then staffing, remained a problem. The American hired to backstop Component III did not work out, and he was not replaced. FSN officers backstopping Component III also were changed. One result of this was a cumbersome and slow decision-making and implementation process for about three years of the Project's implementation period.

4. **Special implementing units for projects or activities can be helpful to the implementation process; however, they can also be an impediment to institutional improvement.** The staff of the implementing unit may receive valuable training, but if these personnel are on contract, they may seek better positions during their employment (as a result of their new skills) and probably will be lost to the agency at the end of the project anyway. In addition, improved management and other systems established for the implementing unit may not permeate into the rest of the agency. This may be even more true if the implementing unit is physically and/or organizationally separate from the rest of its agency and management. If institutional

improvements are sought in a project or activity, then consideration should be given to facing and dealing with the difficulties associated with working with established units of the implementing agency, at least those which may perform. It may make sense to create a coordinating unit (not a management unit) which will know the USAID rules and will keep the books and monitor the end-use of commodities. The operational activity should be carried out by strengthened operational units. TA should be provided to both the coordinating and the operational units, if needed.

5. **USAID funds and/or influence within a country can be such that it can get the head of a host country agency to agree to implement a project or activity which the agency cannot handle or is not truly interested in doing. When this happens, USAID may find that the agency as a whole is structurally unwilling and/or unable to devote the necessary attention to the project or activity to make it work.** In this Project, ANDA is the case in point of this issue; in retrospect, it never exhibited strong interest in small rural WS&S activities, and it never really was able to perform. On the other hand, the Project supported what the MOH had been doing and wanted to do, and the MOH did perform relatively well even though it did not get a large part of the financial pie.

6. **A project to maintain basic infrastructure will likely be a critical need during a civil war in order to avoid economic collapse. Having such a project in place at the end of the war can also accelerate the implementation of reconstruction interventions.** This was the case with Project 519-0320, which was able to focus substantial resources relatively quickly on the post-war requirements of the GOES National Reconstruction Program.

7. **Water supply and sanitation infrastructure construction projects in rural areas will not have the desired health impact, nor be sustainable, unless there is organized community participation and meaningful (to the community) health promotion activities preceding, during, and after the construction period.** At the beginning of Project 519-0320, there were examples of inadequate health messages and attempts to construct facilities without community involvement. These sub-projects had to be re-done by the U.S. PVOs/NGOs at a later stage.

8. **Health education designed to encourage the proper use of new water and sanitation facilities is rarely effective unless it is coordinated with continued monitoring and support by local groups, e.g., Water and/or Health Committees, and carried out in cooperation with mothers, lay health promoters, teachers and other local personnel.** This lesson also had to be learned by the MOH and ANDA managers responsible for the implementation of this Component's activities. The lack of coordination in the field between the health educators and the ANDA construction crews resulted in situations where communities lost interest in the health education messages because the builders didn't show up to construct the systems in a timely manner. With no action forthcoming from the water system builders, the communities lost their eagerness and forgot the lessons of the health promoters.

9. **The possibility of unauthorized use, at least from USAID's standpoint, of Project funded vehicles commonly exists in USAID projects.** During project design, the vehicle use policies and controls of each agency receiving vehicles should be reviewed. If they are inadequate (from USAID's standpoint), a Memorandum of Understanding (MOU) acceptable to USAID should be entered into between USAID and the implementing agency to cover use of the vehicles USAID is to provide. Moreover, a statement of policy and required controls on vehicles should be included in the ProAg to strengthen USAID's position. (Non-counter-signed USAID PILs don't carry the weight of an MOU or the provisions of a ProAg.) In addition, whoever signs for and/or controls the vehicles at the implementing agency should get a copy of the relevant ProAg provisions and MOU, if any.

10. **Commodity end-use rules need to be re-examined and revised so that they are not an encumbrance to implementation.** The only way that Project 519-0320 implementing agencies could satisfy USAID rules (or TA Contractor interpretations of those rules), was to segregate the spare parts purchased by USAID into a separate warehouse from the normal parts distribution point. This is highly inefficient and wasteful and will result in USAID-funded parts being used only after all others have been utilized because of the hassle in using them. The recipient organization should be able to: a) present a receiving report for USAID-funded commodities; b) show evidence of the commodities having been entered into the agency's inventory; and c) show that there is a system in place for recording all issuances and for periodically reconciling inventories. It should not be necessary to insist that the organization can trace every spare part to its final use. As discussed in 7. above, the time to check out the commodity control system of an implementing agency is during project design. If the system is not adequate, the agency should be alerted to make needed changes before it can receive commodities; if the agency needs help, this should be built into the project if it cannot be provided beforehand through some other mechanism.

ANNEX A

SCOPE OF WORK AND METHODOLOGY

Project: Public Services Improvement

Project Number: 519-0320

PACD: 09/30/94 Extended to 09/30/96

OBJECTIVES

This evaluation will be conducted as two distinct activities. The first activity will be to conduct a final evaluation of Component I - Public Services Restoration, Component II - Rural Roads Maintenance and Repair, Component IV - Institutional Strengthening, Project Support, Monitoring, and Evaluation and all elements of Component V - Post War Maintenance, Repair and Reconstruction other than those of water supply, sanitation and health being implemented by the Municipalities and U.S. PVOs/NGOs. This final evaluation is needed to provide USAID/El Salvador with an independent assessment of the progress and impact resulting from efforts to accomplish Project goals and purpose. These efforts and their results also need to be evaluated to provide USAID/El Salvador with information and recommendations useful in guiding public services improvement activities and monitoring the end of project outcomes.

The second activity will be to conduct an interim evaluation for Component III - Water Supply, Sanitation, and Health and Component V - Post War Maintenance, Repair, and Reconstruction for any water and sanitation activities implemented by the U.S. PVOs/NGOs and Municipalities. These efforts and their results need to be evaluated to provide USAID/El Salvador with information and recommendations in order to improve the performance in water and sanitation activities and to serve as a guide for activities to be planned under the twenty-four month extension of the Project.

The objective of the final evaluation is to determine the project impact at the goal and purpose levels of the Project. The goals of the Project are: to provide for economic and social stabilization and growth, and to assure broad participation in the benefits of growth. Therefore at the goal level, the evaluation will assess how and to what extent the project has provided for economic and social stabilization and growth, and to what extent these benefits of growth have reached the rural population, including specific attention to the improved health of this sector, especially children. At the purpose level, the final evaluation will assess:

1) the extent to which the infrastructure agencies of the GOES have restored and preserved vital public services,

2) the extent of improvement in terms of rural population access to markets,

3) the extent of proper usage and access to potable water supply and sanitation systems of the rural population, and

4) the extent of support to the GOES in terms of intensity of maintenance and repair programs of public physical infrastructure under the National Reconstruction Plan.

The objective of the interim evaluation is to determine the project impact at the goal and purpose levels of water and sanitation activities of the Project. At the goal level, it will assess how and to what extent the Project is providing economic, social stabilization and growth, and improved health to Salvadorans, especially children. At the purpose level, the interim evaluation will assess:

1) the extent of proper usage and access to potable water supply and sanitation systems of the rural population,

2) the extent to which the U.S. PVOs/NGOs and Municipalities have rehabilitated and constructed water supply and sanitation systems in the rural areas, and

3) the extent to which rural Salvadorans have benefited in terms of health and hygiene education through coordinated activities between public institutions, PVOs/NGOs and Municipalities.

STATEMENT OF WORK

This section is divided into four parts. Section A deals specifically with questions to be addressed in the Final Evaluation, Section B relates to those questions to be addressed in the interim evaluation, Section C provides the Lessons Learned, and Section D discusses methodology and procedures.

A. The final evaluation shall address the following questions raised as a consequence of the Project's goal, purpose, strategy, and implementation procedures. **Listed in order of importance,** for each issue, the evaluators are expected to describe their findings and present their conclusions.

1) Per the Mission's Program Objectives Document (POD) and Action Plan for FY 95-96, this Project is placed under Strategic Objective (SO) No. 1 -- Assisting El Salvador make the Transition from War to Peace and Strategic Objective No. 4 -- Improved Quality with Equity in Health and Education. What is the Project's actual or potential contribution to the achievement of these SOs? Any contribution and impact on other Mission Strategic Objectives will also be evaluated. The Evaluators will make an assessment of the Project's achievement with respect to the SOs and underlying Program Outputs.

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2) With respect to the Project's five components, the evaluators should assess whether the implementing agencies (ANDA, MOP, CEL, etc.) were appropriate and effective, whether the goal, purpose and objectives were relevant and were met, and whether the operating procedures were relevant and effective for strategy implementation and goal achievement. In addition, what contributions have other USAID/El Salvador projects and/or other institutions such as Municipalities, the U.S. PVOs/NGOs and other donors had on implementation?

3) What effect has commodity management (e.g., DEVRES and Price Waterhouse Reports) and other project related issues had on implementation?

4) Assess sustainability of project benefits. Specifically, the contractor will address the following questions:

   a) What activities need to be continued to ensure benefit sustainability? A clear specification of the types of activities necessary to continue the flow of benefits and their magnitude will be a critical step in evaluating the project's potential for benefit sustainability.

   b) Is there enough political support at both the local and national level for benefits to continue?

   c) What revenues will be needed to sustain these activities?

   d) Is there a capacity for recurrent cost identification, management, and collection?

   e) Are there management systems in place which are appropriate for the mix and level of resources likely to be available over the long term?

   f) Are project activities being conducted in a cost-effective manner (i.e. cost per unit, cost per beneficiary analysis)? What implications are there with respect to recent electricity hikes, cost recovery and privatization issues?

   g) What sources of funding have been identified, and what are other potential sources (IDB, Swiss, Japanese, and other donor involvement)?

   h) Does the institutional implementation (ANDA, CEL, MOP, etc.) arrangement continue after USAID support has been withdrawn, or are the project-supported institutions likely to continue after project completion?

   i) Has the institutional arrangement for project implementation strengthened or hampered the possibilities of sustained project activities?

j) What impact has institutional strengthening had on GOES entities (ANDA, CEL, MOP, etc.) with respect to their sustainability?

k) Does the project have the necessary support from the beneficiaries, e.g. in the form of active participation in operation of facilities and use of services?

5) Assess project impact/sensitivity to women in development (WID) issues. Specifically, the contractor will address the following questions:

a) Did the project design specifically include women as participants and beneficiaries? In which activities? What specific objectives and targets were set for participation by women as compared with men? Are project baseline and monitoring data sex-disaggregated?

b) Were these planned types and levels of participation for both women and men achieved (or exceeded)? Why or why not?

c) How did participation by women, compared with men, influence the degree of success of the project?

d) To what extent did both sexes participate in project activities, how did gender roles effect the activities, and how actively did both sexes participate, e.g. were they active participants in decision-making and/or implementation or were they only recipients of services?

Although observations on gender issues should be integrated in the report, the evaluators should also compile a separate annex to be added to the evaluation report. The evaluators should keep in mind that this assessment will be administered as part of the overall evaluation and not performed as a separate assignment.

6) Any other questions or issues which may arise during the course of the evaluation that the evaluators and/or USAID deem significant.

B. The interim evaluation shall address the following questions raised as a consequence of the Project Component's III and V goals, purposes, strategies, and implementation procedures. **Listed in order of importance,** for each issue, the evaluators are expected to describe their findings and present their conclusions, and as appropriate, offer recommendations to improve performance of the water and sanitation activities.

1) Per the Mission's Program Objectives Document (POD) and Action Plan for FY 95-96, these water and sanitation activities of the Project are placed under Strategic Objective (SO)

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No. 1 -- Assisting El Salvador make the Transition from War to Peace, and Strategic Objective No. 4 -- Improved Quality with Equity in Health and Education. What are the activities' actual or potential contribution to the achievement of these SOs? Could the Project's contribution be enhanced? Any contribution and impact on other Mission Strategic Objectives will also be evaluated. The Evaluators will make an assessment of the Project's achievement with respect to the SOs and underlying Program Outputs.

2) With respect to Component III - Water Supply, Sanitation, and Health, what effect did the implementation of water supply and sanitation activities by ANDA and MOH have toward attainment of Project goals?

3) With respect to Component III and Component V - Post War Maintenance, Repair, and Reconstruction, what was the impact of the introduction of the U.S. PVOs/NGOs and Municipalities in the implementation of water supply and sanitation activities, and how are they addressing the attainment of project goals?

4) Assess sustainability of project benefits. Specifically, the contractor will address the following questions:

   a) What activities need to be continued to ensure benefit sustainability? A clear specification of the types of activities necessary to continue the flow of benefits and their magnitude will be a critical step in evaluating the project's potential for benefit sustainability.

   b) Is there enough political support at both the local and national level for benefits to continue?

   c) What revenues will be needed to sustain these activities?

   d) Is there a capacity for recurrent cost identification, management, and collection?

   e) Are there management systems in place which are appropriate for the mix and level of resources likely to be available over the long term?

   f) Are project activities being conducted in a cost-effective manner (i.e. cost per unit, cost per beneficiary analysis)?

   g) What sources of funding have been identified and what are other potential sources (IDB, Swiss, Japanese, and other donor involvement)?

h) Have the institutional arrangements for project implementation strengthened or hampered the possibilities of sustained project activities?

i) Has the project taken steps to maximize the involvement of beneficiaries, e.g. in the form of active participation in the planning, construction, operation, maintenance, and administration of facilities and use of services?

5) Assess project impact/sensitivity to women in development (WID) issues. Specifically, the contractor will address the following questions:

a) Did the project design specifically include women as participants and beneficiaries? In which activities? What specific objectives and targets are set for participation by women as compared with men? Are project baseline and monitoring data sex-disaggregated?

b) Are these planned types and levels of participation for both women and men being achieved (or exceeded)? Why or why not?

c) How does participation by women, compared with men, influence the degree of success of the project?

d) To what extent are both sexes participating in project activities, how are gender roles affecting the activities, and how actively are both sexes participating, e.g. are they active participants in decision-making and/or implementation or are they acting only as recipients of services and the types of activities, e.g. water committees, health promoting and education?

Although observations on gender issues should be integrated in the report, the evaluators should also compile a separate annex to be added to the evaluation report. The evaluators should keep in mind that this assessment will be administered as part of the overall evaluation and not performed as a separate assignment.

6) Any other questions or issues which may arise during the course of the interim evaluation that the evaluators and/or USAID deem significant.

C. Lessons Learned

The focus of this section shall be on any Project experiences which may serve as guidelines for USAID/El Salvador, other countries, USAID, and donors.

D. Methodology and Procedures

The evaluation team will receive an in-depth briefing by the USAID upon arrival. Following the briefings, a few days will be required to review pertinent Project documentation, e.g., Project Paper and Amendments, Project Agreements, PILs, Project Correspondence, pertinent audits, project beneficiary analyzes, and Financial and Activity reports.

The review of Project documentation shall be followed by extensive visits to implementing entities. Key personnel in those entities shall be interviewed and their perspectives shall be gained. Project beneficiaries shall be visited. A sample of beneficiaries in each of the major components and activities of the Project shall be interviewed. It is assumed that throughout the conduct of the above activities the evaluation team will be drafting sections of their preliminary report. The remaining time shall be used in preparing the required report, verifying information and conducting exit briefings.

REPORTS

The Contractor shall provide to USAID the following:

A. Participation in entrance and exit briefings with the Project Officer, the Mission Evaluation Committee, technical offices, and Mission management, as appropriate.

B. Within five weekdays from the day of arrival, the team leader shall submit for USAID approval a preliminary workplan, including intended site visits.

C. Not later than seven workdays before leaving El Salvador, the team leader shall provide USAID with five copies of a draft report in English, along with a Spanish language translation of the draft Executive Summary. This draft will be reviewed by the Mission Evaluation Committee within four days, and oral and written comments/recommendations will be provided to the team leader.

D. The Contractor shall consider the USAID's comments and recommendations in preparation of the final draft report, which is to be left with the Mission prior to departure.

E. USAID will provide final comments on the draft report within two weeks. The Contractor shall consider these comments in the preparation of the final report and shall send to USAID 20 copies of the final report in English and 20 copies in Spanish within 30 days of receipt of the USAID's final comments. The report shall be unclassified. Therefore, if the team believes the Mission will want to classify any of the information collected, this shall be provided in an addendum to the report. The evaluation report shall include, but not be limited to, the following sections or annexes:

1) **Executive Summary:** Including a brief description of the Project and the purpose of the evaluation, the methodologies used, findings, conclusions and recommendations. It shall also include comments on development impact and lessons learned. It shall be complete enough so that the reader can understand the evaluation without having to read the entire document and shall be self-contained.

2) **Scope of Work and Methodology Annex:** A copy of the initial scope of work and a detailed outline of the methodology used will be included. Any deviation from the scope will be explained.

3) **Evaluation Team Annex:** A complete list of evaluation team members, their field of expertise and the role they played on the team. Include their organizations title, address and telephone number.

4) **Lessons Learned:** A description of the causal relationship factors which have proved critical to Project successes or failures, including political, policy, economic, social and bureaucratic conditions within the host country and USAID which have impacted and/or are impacting on the Project. These shall also include a discussion of the design and implementation techniques or approaches which proved most effective or had to be changed and why. Lessons relating to replicability shall be discussed, i.e. how other countries, donors or USAID could benefit from the lessons learned from the Project.

5) **Paginated Table of Contents**

6) **Glossary of Acronyms**

7) **Annex of Persons Interviewed:** Include their organizations title, address and telephone number.

8) **Table of Financial Inputs:** This shall be broken down by components and major types of activities, by sources of funds (Project 519-0394 and other USAID projects, HCOLC, GOES ordinary budget commitments) and by related disbursements.

9) **Table of Project Outputs** compared with projections in the Project Paper

10) **Table of Implementing Institutions:** This shall be broken down by Project Component and by type of institution, i.e., Central Government Institutions, Municipalities, PVOs/NGOs and International Organizations.

11) **Recommendations Annex:** A list of all recommendations to Host Country and USAID made in the report in priority order.

F. **USAID Evaluation Summary:** The Mission will provide forms and appropriate guidance for the submission of a draft of this formal summary.

G. **Project Completion Report:** The Mission will provide format and appropriate guidance for contractor to complete draft of this report which is subject to Mission approval.

ANNEX B

EVALUATION TEAM

Cambridge Consulting Corporation (CCC)
1410 Spring Hill Road, Suite 450
McLean, Virginia 22102
Tel: (703) 917-7909
FAX: (703) 917-7918

Ronald A. Witherell -- Team Leader

A retired USAID Senior Foreign Service Officer who worked in El Salvador before the civil war from 1968 to 1971, during the civil war from 1984 to 1989, and after the civil war part-time from 1992 until mid-1994. His experience with USAID includes the positions of Program Officer, Projects Officer, General Development Officer, Associate Mission Director and a number of periods as Acting Mission Director. He has an M.S. in management.

Mr. Witherell provided leadership and guidance to the team, reviewed project documentation, participated in USAID briefings and in selected interviews with Project implementing agency personnel, reviewed and assessed information and data captured, formulated the draft report format, assisted in writing and editing the draft report and presented it to the USAID for comments, after which he assisted the CCC home office to prepare the final report.

Lewis B. Taylor -- Professional Engineer

Mr. Taylor is a general engineer licensed in the state of Oklahoma. Most of his private sector experience has been in structural and municipal engineering. He has worked in Southeast Asia, Egypt, Ethiopia and Ghana, as well as on numerous occasions in El Salvador in planning, implementing and evaluating development projects funded by USAID or by the World Bank. He was at one time Assistant Chief Engineer for USAID in Washington, D.C. He retired from USAID as a high level Foreign Service Officer in 1975. Mr. Taylor made extensive field visits to infrastructure sites and to the offices of the implementing agencies. He drafted those sections of the report which deal with engineering aspects of the Project.

James L. Roush -- Institutional Development Expert

A former USAID Foreign Service Officer, Mr. Roush's 25-year career took him to Europe, Africa, Asia (Vietnam), and Latin America (Deputy Director of ROCAP and Director of Chile); he also headed the PBAR Task Force which introduced new systems into USAID/W for the planning,

budgeting, accounting and reporting of project assistance. He is a graduate of the Federal Executive Institute and the U.S. Army War College. Since retiring, Mr. Roush has had over 50 consulting assignments for USAID, mostly in Latin America and Africa; he has evaluated the evaluation system of the African Development Bank. He reviewed the IDB Program for Funding Small Projects, proposed streamlined procedures for designing, approving, implementing and evaluating Small Projects and prepared operational manuals for use by borrowers and IDB field offices. Institutional assessments have been carried out of USAID missions, a USAID/W office, and entities implementing USAID programs, including two in El Salvador: FUSADES and the Procuraduría para la Defensa de los Derechos Humanos. He was leader of the team that did the mid-term evaluation of USAID/El Salvador's Peace and National Recovery Project.

Mr. Roush drafted the section on Component IV - Institutional Strengthening, Project Support, Monitoring, Evaluation and Audit. He reviewed a number of the files (e.g., Project Implementation Letters, TA Contractor's monthly reports, project correspondence, etc.) and provided summaries of findings for use of other team members. He contributed to the evaluation team's analytical work and assisted with the editing of the draft report.

Mary Lindsay Elmendorf -- Development Anthropologist

Dr. Elmendorf has become a specialist in women, water sanitation and health since her 1975 appointment to the World Bank, first in the Office of Environment and Health and later in the Division of Water Supply and Sanitation. Dr. Elmendorf has done research, project preparation, evaluation and monitoring with various agencies, both governmental and private. She attended the 1977 UN Mar de Plata Conference on Water as advisor to the US Delegation and the 1992 UN Conference on the Environment (Earth Summit in Río) as a consultant for CEDPA. She participated in the UN Conferences on Women in 1975, 1980, and 1985 as participating panelist at the first two and researcher/organizer for the latter. She was a member of USAID's Research Advisory Committee (RAC) from 1978-82. Her specific expertise in WS&S started in 1957 when as CARE Director in Mexico she designed and implemented, with AFSC volunteers, CARE's first well-drilling project and later did Peace Corps training in community participation.

As a member of a USAID-funded team, she assisted in the preparation of the National DECADE Plan of Action for Sri Lanka. She also prepared the first WASH technical reports on community participation, women, and health with the late Dr. Ray Iseley. As a consultant, she has worked on rural WS&S projects in Guatemala, as team leader on a USAID evaluation mission in Nicaragua, as team leader for World Bank project preparation, and team member for USAID Honduras and the Philippines programs as well as on various short term research assignments with WHO, UNICEF, FAO and IDRC.

As part of her assignment at the World Bank, Research Project on Appropriate Technology and Sanitation, she designed and supervised eight case studies in Latin America in 1977 which were analyzed and published as the Socio-Cultural Aspects of Excreta Disposal, still available in Spanish, French and English. In 1982, she prepared a project paper for UNDP-World Bank called "The Promotion and Support of Women in Water Supply and Sanitation," initially funded in part by NORAD, later USAID and implemented by UNDP as PROWWESS. Recently, PROWWESS was incorporated into World Bank programs as a part of their new emphasis on participatory approaches to development.

Dr. Elmendorf, with Engineer Lewis Taylor, Jr., drafted Components III and IV, made brief field trips to projects and analyzed the other components with the team, especially the sections related to Women in Development.

ANNEX C

LIST OF PERSONS INTERVIEWED

GOVERNMENT OF EL SALVADOR (GOES)

- **AME** (Tel. 227-0685)
  Carlos Francisco Cuellar
  General Manager

  Vilma de López
  Chief of Financial Administration

  Ernesto Rodríguez
  Manager of Maintenance Department
  AME Central Workshop

  Mauricio Castro
  Chief of the Workshop in Santa Ana

  Antonio A. Alfaro Bonitez
  Division Chief-Western Zone in San Miguel

- **ANDA** (Tel. 222-1006)
  Raúl Rodríguez
  Projects and Works Manager

- **CEL** (Tel. 271-0855)
  Roberto Alcides Funes
  (Formerly) Chief, USAID Management Unit
  (Now) Chief, USAID Commodity Warehouse Complex

- **CEPA** (Tel. 298-5477)
  Francisco Palomo
  Maintenance Chief
  Port of Acajutla

- **DGC** (Tel. 222-3244)
  Alvaro Paz Alegría
  Manager, Management Unit

  Ana Mercedes Nuila de López
  Chief of Operations Department, Management Unit

- **FENADESAL** (Tel. 222-9000)

Tulio O. Vergara
Manager

Julio F. Pineda
Chief of Rolling Stock and Fixed Plant

Luis Guzmán
Chief of Warehousing

- **FIS** (Tel. 279-3118)

José Jacinto Reyes
Deputy Director, Project Promotion and Evaluation

- **MOH** (Tel. 222-3324)

Ana Estela Valencia de Parada, MD
Chief, Education Unit

María Mercedes Padilla
Education Supervisor

Patricia Figueroa de Quinteros, MD
Chief, Technical Area of Community Health

Zoila Marina de Guadrón
Chief of Community Health Training

U.S. PVOs/NGOs

- **CARE** (Tel. 279-2600)

Thomas F. Rosenberger,
CARE Director, El Salvador

Joseph Narkevic
Project Manager

CARE Field Staff

Gonzalo O. Rodríguez
Margarita Maribel Ruíz
Mario Antonio Rivas
Vilma Esther Zelaya
Marvin Elizabeth Mejía
Marlene Gavidia

- **Creative Associates International** (Tel. 223-5244)

Andrew Karp
Water and Sanitation Project Director

J. Jude Pansini, PhD
Civic Participation Project
Anthropologist

Alex Polanco
Engineer

Ana Luisa Dueñas
Engineer

Oscar Rodríguez
Facilitator

Teresa Manzano
Facilitator

Blanca de Cruz
Facilitator

- **Project Concern International** (Tel. 224-4788)

Charles C. Compton
Project Director

Oscar G. López
Operations Coordinator

América de Duarte
Chief of Health Operations

USAID (Tel. 298-1666)

Henry J. Reynolds
Acting Mission Director

Christopher Edwards
Mission Evaluation Officer

Carrie Thompson
Acting Director, Office of Democratic Initiatives and Women
In Development Officer

Mark Gallagher
Economist

Office of Infrastructure and Regional Development

Marc S. Scott
Office Director

Ernesto Girón Carballo
Mission Engineer

James Habron
Major Infrastructure Division Chief
Project Manager (519-0320)

Raúl Antonio González
Project Manager (Electric Power)

Hugo I. Guerra
Project Manager (Water Supply)

Javier Houdelot
Project Manager (Ports and Railway; ANDA Procurement)

Rafael Peña Ulloa
Project Manager (Commodity Procurement)

José Antonio Ramos Chorro
Project Manager (Roads and Bridges)

Thomas Hawk
Chief, IRD/RUD

Aldo Miranda
Deputy Chief, IRD/RUD

Jorge M. Abullarade
Project Manager, IRD/RUD (Paracentral and East)

Office of Health and Education

Peter Deinken
Office Director

Rafael Callejas
Project Manager (Water and Sanitation Component)

Maricarmen Martínez
Project Management Assistant

INCAP, Guatemala (Tel. 502-2-69-0353)

Elena Hurtado, PhD
Medical Anthropologist

INTER-AMERICAN DEVELOPMENT BANK (IDB) (Tel. 223-8300)

Trinidad Zamora
(Formerly) Road Maintenance Management Specialist (LBII)
Sector Specialist - Transportation

LOUIS BERGER INTERNATIONAL, INC. (LBII)

Michel Jichlinski
Vice-President

Luis María Aller-Atucha
(Formerly) Health Education Advisor

INDIVIDUALS

Paul Doughty, Ph. D. (Tel. 904 -376-2250)
Development Anthropologist, Distinguished Professor
Gainesville, FL 32603

Sandy Smith-Nonini (Tel. 919-286-7396)
PhD Candidate Anthropology,
University of North Carolina, Chapel Hill

Rod E. Prada (Tel. 305-885-8554)
Technical Resources Int'l Corp., President

Members of Water Committees and Health Committees as well as various beneficiaries in the communities visited in the departments of Santa Ana, La Libertad, Usulután and San Miguel

ANNEX D

IMPLEMENTING INSTITUTIONS
Project 519-0320

Component I - Public Services Restoration

Central Government Institutions

ANDA	- Water system restoration
CEL	- Electrical system restoration
MOP	- Bridge and highway restoration
CEPA	- Railway, airport and port restoration

Component II - Rural Roads Deferred Maintenance and Repairs

Central Government Institutions

MOP-DGC	- Rural road maintenance and repair
MOP-AME	- Equipment maintenance and management

Component III - Water Supply, Sanitation and Health

Central Government Institutions

ANDA	- Water supply and sanitation organization, documentation, design and construction
MOH	- Health education and training

U.S. PVOs

CREA	- Water supply and sanitation promotion, design and construction; and health education and training
PCI	- Same as above

Component IV - Institution Strengthening, Project Support, Monitoring, Evaluation and Contingencies

USAID - Contract TA, project support, auditing and evaluation

Component V - Post-War Maintenance Repair and Reconstruction

Central Government Institutions

MOP - Rural road rehabilitation

CEPA - Rail line and related bridges rehabilitation; and commodity procurement for rolling stock and facilities

CEL - Installation of distribution and sub-transmission systems, procurement of related commodities

Municipalities - Water Systems

U.S. PVOs/NGOs

CARE - Water supply and sanitation promotion, design and construction; and health education and training

PCI - Same as above

ANNEX E

PROJECT FINANCIAL INPUTS LIFE OF PROJECT BUDGET ($Millions)						
COMPONENT	ORIGINAL PROJECT AGREEMENT (8/89)			CURRENT (12/94)		
	USAID	GOES	TOTALS	USAID[1]	GOES[2]	TOTALS
I. PUBLIC SERVICES RESTORATION	$ 23.72	$ 12.74	$ 36.46	$ 23.06	$ 4.47	$ 27.53
II. RURAL ROADS DEFERRED MAINTENANCE & REPAIRS	4.30	30.41	34.71	8.12	31.32	39.44
III. WATER SUPPLY, SANITATION & HEALTH	21.74	8.33	30.07	12.44	8.98	21.42
IV.						
a. INSTITUTIONAL STRENGTHENING AND PROJECT SUPPORT	12.40	-0-	12.40	10.55	-0-	10.55
b. EVALUATION AND AUDIT	3.00	-0-	3.00	.65	-0-	.65
c. INFLATION AND CONTINGENCIES	9.84	8.52	18.36	.15	.38	.53
V. POST-WAR MAINTENANCE REPAIR AND RECONSTRUCTION						
a. ELECTRIC POWER	-0-	-0-	-0-	3.93	4.30	8.23
b. RURAL ROADS	-0-	-0-	-0-	2.43	6.00	8.43
c. WATER AND SANITATION	-0-	-0-	-0-	5.65	-0-	5.65
d. RAILROAD	-0-	-0-	-0-	.94	.50	1.44
TOTAL	$75.00	$60.00	$135.00	$67.93[3]	$55.95[4]	$123.87

1/ From Project Implementation Letter No. 188, dated September 22, 1994.

2/ Budget from Project Agreement Amendment No. 8, dated August 1993, which is the last Project Agreement containing a budget. All GOES contributions were from HCOLC (ESF and PL-480 Title I generations).

3/ USAID/El Salvador plans to reduce the Project's Authorization to $67,924,000 -- the Project's current obligation -- and not to obligate any further funds to this Project.

4/ Consistent with USAID policy, all Colones were converted to US dollars equivalent at C5 = US$1, the exchange rate when the original Project Agreement was signed in August 1989.

PROJECT FINANCIAL INPUTS
ACCRUED EXPENDITURES AS OF NOVEMBER 1994
($ MILLIONS)

COMPONENT	USAID	GOES	TOTALS
I. PUBLIC SERVICES RESTORATION	$ 23.1	$ 3.3	$ 26.4
II. RURAL ROADS DEFERRED MAINTENANCE & REPAIRS	7.8	29.7	37.5
III. WATER SUPPLY, SANITATION AND HEALTH	6.3	7.2	13.5
IV.	9.9	-0-	9.9
a. INSTITUTIONAL STRENGTHENING AND PROJECT SUPPORT	(9.6)	-0-	(9.6)
b. EVALUATION AND AUDIT	(0.3)	-0-	(0.3)
c. INFLATION AND CONTINGENCIES	-0-	-0-	-0-
V. POST WAR MAINTENANCE REPAIR AND RECONSTRUCTION	8.8	9.1	17.9
a. ELECTRIC POWER	(3.9)	(3.0)	(6.9)
b. RURAL ROADS	(1.8)	(5.6)	(7.4)
c. WATER AND SANITATION	(2.2)	-0-	(2.2)
d. RAILROAD	(0.9)	(0.5)	(1.4)
TOTAL	**$ 55.9 1/**	**$ 49.3 2/3/**	**$105.2**

1/ Per IRD/MID special accrued expenditures exercise as of 30 November 1994.

2/ Based upon a November 1994 Report by the GOES Secretaría de Tesorería y Financiamiento (SETEFE).

3/ All Colones converted at Project 519-0320 rate of ¢5 = US$1.

ANNEX F

CHRONOLOGY OF IMPORTANT EVENTS/ACTIONS IN PROJECT 0320
(with emphasis on Component III)

1989

Aug 2 Project Paper signed.

Aug 30 Project Agreement (PRO-AG) signed, providing $8 million of a $75 million project with four components:

I) support restoration of services interrupted and facilities damaged or destroyed as a result of insurgent activity or natural disaster;

II) a) assist in performance of deferred maintenance and repair of indirect damage to primarily rural roads; and

b) assist in maintenance of AID-financed construction equipment for road maintenance;

III) a) construct and repair small rural water systems and sanitary facilities; and

b) provide health education in rural communities; and

IV) a) provide technical assistance to:

i) assist in Project management; and
ii) enhance the implementing institutions' capability to perform their functions (including policy analysis) and sustain Project activities; and

b) perform evaluations and audits.

Aug 30 Initial USPSC Project Manager on-board in USAID (IRD/MID)

Jan 2 Project Implementation Letter (PIL) No. 1 signed acknowledging fulfillment of normal Conditions Precedent (CPs) (4.1(a) & 4.1(b)) and modifying CP on the establishment of the coordination mechanism between MOH and ANDA (4.1(c)) to apply only to disbursements on Component III.

1990

Jan 19 PRO-AG Amendment No. 1 signed adding $9,750,000; new project total of $17,750,000.

Mar 14 PIL No. 2 signed approving three proposed contracts by CEL for substation equipment -- this was first US dollar-funded procurement for CEL for commodities.

Mar 30 PIL No. 3 signed setting forth detailed procedures for the implementation of the Project and acknowledging fulfillment of Condition Precedent 4.1(c).

Apr 1 Departure of initial USPSC Project Manager from USAID.

Jul 12 PIL No. 6 signed approving ANDA Action Plan for July 1990 to June 1991.

Jul 13 PRO-AG Amendment No. 2 signed adding $19,184,000 (new total is $36,934,000), re-stating the USAID intention to contract for services and commodities under Component IV, and providing a new financial plan.

Jul 30 PIL No. 7 signed approving a proposed MOP contract for 8 4WD pick-ups. This is first MOP US dollar-funded procurement for commodities.

Aug 1 TA contract signed with Louis Berger International, Inc. (LBII) for $5,314,766, of which $2 million funded. Balance added by Amendment No. 1 to PIO/T on Sep 7'91.

Sep 28 PRO-AG Amendment No. 3 is signed, obligating an additional $6.5 million; new total is $43,434,000.

Nov 30 State Cable 399975 received which provided new instructions on host country contracting--special analyses of host country entities and certification by the Mission Director are required before they can be allowed to contract for commodities and services using USAID funds.

Dec 10 The new Deputy Director assigned to the Infrastructure and Regional Development (IRD) Office begins to disrupt the Office through re-assignments of IRD/MID personnel and a personal campaign to privatize CEL; he leans heavily on the TA Team.

Mar 20 PIL No. 20 signed approving a proposed ANDA contract for electrical motors for use at pumping stations. This is the first US dollar-funded procurement for ANDA for commodities.

Apr 1 2nd USPSC Project Manager assumes duties in USAID, IRD/MID.

1991

Apr 4 ANDA model contract documents for the drilling of wells and construction of latrines submitted to USAID for final approval.

Apr 17 Contract signed with LBII to perform Host Country contracting assessment of MOP, ANDA, and CEL.

Apr 26 Draft ANDA Guide for Evaluation of Prequalification submitted to USAID for approval.

May 2 PRO-AG Amendment No. 4 signed adding $9,240,000 to Project and giving new total of $52,674,000.

Jun 6 LBII submits Host Country Contracting Assessments for CEL, ANDA, and MOP (DGC & AME) to USAID.

Jun 7 ANDA model contract documents for the drilling of wells and construction of latrines approved by USAID by Letter IRD-140.

Jun 30 LBII reports that DGC has agreed that actual implementation work should be carried out by line units, not MU. TA will be used to help those units come up to speed; new systems will be installed in line units.

Jul 3 Departure from USAID of 2nd USPSC Project Manager.

Jul 9 PIL No. 26 signed approving, with modifications, ANDA bid documents for drilling 18 wells and installing hand-pumps in the Cantones San Antonio Caminos and Dos Quebradas in San Vicente Department -- first Host Country contract approved for ANDA for construction services.

Jul 25 PRO-AG Amendment No. 5 signed adding $3,250,000 giving a new Project total of $55,924,000.

(GOES began planning for a National Recovery Plan.)

Aug 15 PIL No. 31 signed approving, with modifications, ANDA bid documents for drilling 22 wells and installing hand-pumps in Canton Los Chilamates in Chalatenango Department.

Aug 15 PIL No. 32 signed approving, with modifications, ANDA bid documents for drilling 25 wells and installing hand-pumps in Cantones Talcualuya and Atiocoyo in La Libertad Department.

1991 (cont'd)

Aug 23 DEVRES, Inc. submitted its "Evaluation of the Commodity Management Systems of Selected A.I.D. Grants" with 36 recommendations for improvements in the 0320 implementing agencies: DGC -5; AME -10; ANDA -6; CEPA- 7; CEL -8.

Aug 26 Incumbent USPSC Project Manager assumes duties in IRD/MID.

Aug 30 The MOH provided to ANDA a list of eligible communities for water supply systems. ANDA began verification of the technical feasibility of well drilling and latrine construction in these cantons.

Sep 16 PRO-AG Amendment No. 6 approved adding $3.5 million bringing the total to $59,424,000.

Sep 16 PIL No. 33 signed approving, with modifications, ANDA bid documents for drilling 27 wells and installing hand-pumps in Cantones Tonala and El Presidio in Sonsonate Department. Request dated 7/19.

Sep 19 Host Country Contracting Certification signed by Mission Director for CEL, ANDA, and MOP/DGC. This permits procurement of both commodities and services under the new guidelines set forth in State Cable 399975 of 11/30/90.

Sep 27 IRD holds day-long Seminar on HC Contracting Procedures for officials of all GOES Agencies implementing activities under Project 0320.

Oct 9 PIL No. 34 approved, with modifications, ANDA bid documents for constructing a potable water system for Amatitan, San Salvador Department. Request dated 8/27.

Oct 11 PIL No. 36 signed approving ANDA bid documents for construction services for potable water for San Esteban Catarina in San Vicente Department.

Oct 25 PIL No. 37 signed approving ANDA bid documents for drilling 16 wells and installing hand-pumps in Canton El Carmen in La Paz Department and San Ramon Grifal in San Vicente Department. Request dated 9/16.

Nov 26 MOP Procurement Plan for 1990-1991 approved by USAID Letter IRD-535.

Dec 2 Amendment No. 2 to LBII contract signed adding $500,000 and authorizing procurement of equipment and materials for MOH (not cleared for HC Contracting) and additional ADP equipment for other implementing agencies.

1991 (cont'd)

Dec 11 PIL No. 39 amended Financial Plan in Annex I to PRO-AG to permit variations in expenditures up to 15 percent from budget line items without prior written approval by USAID.

Dec 31 LBII reports that the ANDA Board is slow in approving proposed list of those prequalified for construction supervision; that ANDA and MOH regional offices are functioning in Santa Ana and San Miguel; and that MOH has fully implemented its regionalization plan and it has assigned a full time health educator and a sanitary inspector to each of five regions.

1992

Feb 3 All ANDA contracting activity on hold pending USAID approval of ANDA's Action Plan; salaries for ANDA-MU personnel for January have not been paid.

Feb 16 Chapultepec Peace Accords signed between the GOES and the FMLN (the guerilla organization.)

Feb 28 LBII reports that MU staff are still being diverted to work on other USAID projects. (A later report said 30 percent of the MU personnel were so assigned. This continued indefinitely.)

Mar 25 Peace and National Recovery Project No. 519-0394 authorized. It provides for contributions by Project 0320. Much work has been devoted to modifying 0320 plans.

Mar 26 USAID suspended all implementation action in Comp. III pending review of recommendations made by A.I.D. special consultant Herbert Caudill.

Apr 29 USAID-ANDA-SETEFE-LBII seminar to review recommendations of Consultant Herbert Caudill, Jr. on the implementation of Component III.

May 6 PRO-AG signed for Project 519-0394 - Peace and National Recovery. This incorporated activity by Project 0320.

Jun 1 USPSC Sanitary Engineer arrives at IRD/MID to manage WS&S activities under Comp. III.

Jun 2 PIL No. 46 signed approving contract award for well drilling and hand-pump installation in 13 sites near Canton El Presidio in Sonsonate Department. Request dated 3/17 and 3/23.

1992 (cont'd)

Jun 9 USAID Letter USAID-IRD-255 acknowledges agreement between President of ANDA and USAID Mission Director regarding implementation of ANDA program and the need to re-program the previously approved Action Plan.

Jul 27 PIL No. 51 signed approving re-programming of funds to permit importation of materials for repair of Pier B Fender System at the Port of Acajutla.

Jul 30 Mission Director issues New Directions for Project 0320. Regarding ANDA he instructs that; we move to decentralize system construction away from ANDA to municipalities and PVOs; we redefine ANDA's role to that of setting norms, regulating and enforcing standards, and provision of technical assistance to municipalities, community water boards, PVOs, and etc; and within USAID establish closer working relations with USAID's Health Sector Program and with the MEA Program.

Jul 31 PIL No. 52 signed regarding use of project-funded vehicles, Component I and II.

Aug 11 PIL No. 53 extends the expiration date for ANDA's 1990-91 Action Plan to 9/30/94.

Aug 27 All positions in IRD/MID filled. This is the first time since Project began.

Sep 7 PRO-AG Amendment No. 7 signed adding a fifth component: "to provide access to services and to assist in performance of intensive maintenance and repair and reconstruction of public sector infrastructure in formerly conflictive zones." An additional $5 million was added, giving a project total of $64,924,000. A CP was added requiring an Action Plan for Component V before funds could be released for that component.

In the amendment to Annex I, it is stated that the focus of the new Component V activities will be: (1) emergency repair programs providing high visibility, high impact benefits in the target zones [ex-conflictive], including short-term employment generation; and (2) restoration of infrastructure and access to basic services inside the conflictive zones. Priority attention will be given to activities that have been identified as high priority at municipal open town meetings, but which are beyond the scope and capacity of the MEA program. An elaboration is given of "emergency repair programs" and "infrastructure reconstruction and restoration."

Sep 24 USAID approved Frank Kowal to replace Paul Woodbury as COP for the LBII TA Contract.

Oct 22 PIL No. 59 signed approving financial re-programming (including PL 480 generations) and goal re-structuring of the ANDA Action Plan for Component III.

1992 (cont'd)

Oct 31 LBII reports that Abonera latrine construction manual completed; it will be used by ANDA promoters and MOH inspectors to train community leaders.

Nov 3 DGC/MU Re-Programming Action Plan approved; MU personnel received their first pay checks in 3 months on 11/6.

Nov 11 ANDA regionalization and re-structuring plan sent to President of ANDA for approval.

Nov 30 LBII reports that each ANDA regional office is now trained and equipped to carry out their own hand-dug well projects.

Dec 2 PIL No. 63 signed approving a pilot project for the drilling of 10 wells by the Well Drilling Department of ANDA. Request dated 10/27.

Dec 3 PIL No. 64 signed approving ANDA bid award for water supply for San Esteban Catarina municipality in San Vicente Department. Request dated 9/13 and 9/28.

Dec 4 PIL No. 65 signed approving ANDA bid award for water well drilling and hand-pump installation at 16 sites in canton El Carmen in La Paz Department and San Ramon Grifal canton in San Vicente Department. Request dated 11/12.

Dec 9 PIL No. 66 signed approving ANDA bid award for well drilling and hand-pump installation on 18 sites in Dos Quebradas and San Antonio Caminos in San Vicente Department. Request dated 9/3 and 9/11.

Dec 9 Departure from USAID of USPSC Manager for WS&S activities under Comp. III.

Dec 17 The ANDA-MU re-organization plan was approved by the ANDA Junta de Gobierno.

Dec 18 PIL No. 68 signed approving ANDA bid award for water supply service for Caserio Amatitan, Ilopango municipality, San Vicente Department (see PIL No. 34, 10/9/91 and letter USAID-IRD-167 of 4/10/92). Request dated 11/30.

Dec 18 PIL No. 69 signed approving ANDA bid award for well drilling and hand-pump installation at 15 sites in Talcualuya canton in La Libertad Department (see PIL No. 32, 8/15/91 and letter USAID-IRD-167 of 4/10/92). Request dated 10/19/92.

Dec 22 MOH provides to ANDA-MU list of the communities in the Western and Central Regions of the country which have been preselected for the installation of hand-pumps in existing hand-dug wells.

1992 (cont'd)

Dec 31 President of ANDA fires most of top staff of ANDA/MU. (USAID had informally discussed unhappiness with MU's performance, but did not expect such a reaction.)

1993

Jan 20 IRD/MID initiates training program for new ANDA-MU personnel.

Jan 29 PIL No. 72 signed approving ANDA 1993 procurement plan for Component I. Request dated 12/28/92.

Jan 29 PIL No. 73 signed approving ANDA 1993 procurement plan for Component III. Request dated 12/29/92.

Feb 17 PIL No. 74 signed approving an amendment in the Cooperative Agreement between the ANDA Well Drilling Department and the ANDA Management Unit to allow the former to increase its A.I.D.-funded activity from 10 wells to 40 wells. Request dated 1/15.

Feb 17 Action Plan for Re-structuring ANDA/MU per June 9, 1992 agreement went to USAID by SETEFE. (It had previously been submitted to SETEFE and returned for modification.)

Feb 28 The training program for new ANDA-MU personnel was completed; LBII reports that new management personnel working effectively. The MU is currently only 44% staffed-five engineer positions vacant-and personnel are being used on other USAID projects.

Mar 3 USAID Project Implementation Committee rejects ANDA-MU Re-structuring Plan, wants it re-written.

Mar 4 PIL No. 75 signed approving the MEA Potable Water and Distribution and Sanitation Action Plan to be funded from Component V. Request dated 1/25.

Mar 8 ANDA-MU manager writes MID asking for USAID approval of Re-structuring Plan.

Mar 15 PIL No. 76 signed approving a re-programming of project funds, particularly in Components I, II and V.

Mar 15 SETEFE tells ANDA the bad news from USAID. (Rejection of the ANDA-MU Restructuring Plan.)

1993 (cont'd)

Mar 19 PIL No. 60 signed transmitting a replacement for Annex II (Standard Provisions) of the PRO-AG; modifications were in Sections B.5. Reports, Accounting and Records and B.8. Information and Marking.

Mar 24 The ANDA/LBII team for re-writing the Re-structuring Plan met in USAID; will use USAID's outline.

Mar 27 Two short-term Salvadorean water engineers are brought in under LBII contract to help move the documentation in ANDA.

Apr 30 LBII reports that due to little use of the latrines delivered and officially inaugurated, promotional and educational activities were re-designed and efforts increased in those communities where such infrastructure is in place.

May 24 PIL No. 87 signed acknowledging two new Project representatives for ANDA.

May 26 A re-write of the ANDA/MU re-structuring plan is in circulation in USAID for USAID/LBII meeting.

Jun 4 PIL No. 100 signed approving re-programming of funds to permit NGOs to implement water supply and sanitation activities under Components III and V. USAID to do Cooperative Agreement with CREA for $3 million.

Jun 8 Cooperative Agreement signed with CREA for implementation of WS&S activities under Comp III and V.

Jun 17 PIL No. 105 signed approving ANDA IFB for drilling 19 wells and installing hand-pumps in Canton Santa Barbara, El Paraiso municipality, Chalatenango Department (Comp. III). Request dated 6/4.

Jun 25 PIL No. 109 signed approving ANDA IFB for drilling of 11 wells and installation of hand-pumps at El Cacao canton, Sonsonate municipality, Sonsonate Department (Comp. III). Request dated 6/11.

Jun 29 Amendment No. 3 to LBII Contract signed adding $275,000 for Management Information System (MIS) materials for CEPA, additional ADP equipment for other implementing agencies for inventory control, and other equipment and materials.

Jun 29 PIL No. 110 signed approving ANDA IFB for improvement of the water system in Joya de Ceren/San Juan Opico/La Libertad (Comp. III). Request dated 6/4.

1993 (cont'd)

Jun 30 In its June 1993 report, LBII again asked for USAID support. The request for support included:

1) Requesting AME to demonstrate the CFA program and DGC to demonstrate the SIAMV program; also asking DGC to submit regular reports on road maintenance based on SIAMV;

2) Assistance in resolving the inventory reconciliation bottleneck in AME Central Waterhouse;

3) Requesting that DGC hire and train new personnel to expedite processing of field data from the 1993 Road Inventory Update;

4) Halting the diversion of ANDA-MU staff to other projects;

5) Immediate attention towards filling engineering staff vacancies in the ANDA-MU; and

6) A decision on the level and type of funding to be provided to the ANDA Drilling Department; and

7) decide on ANDA-MU re-structuring plan.

Jul 9 Another draft double-spaced version of the ANDA/MU Re-Structuring Plan is in circulation in MID. The Project Implementation Committee is scheduled for the following week.

Jul 13 PIL No. 114 approved a re-programming of $ and LC in ANDA's multi-year Action Plan, thereby permitting MU to operate at current levels in Jul-Oct 93 while MU's fate was being determined, construction of walls and repair of roofs of 3186 latrines and design of Potable Water System, Phase II, San Ildefonso, San Vicente Department. Request dated 6/9.

Jul 13 PIL No. 116 signed approving ANDA IFB for drilling 23 wells and installing hand-pumps at Tecomapa canton, Santa Ana municipality (Comp III). Request dated 6/21.

Jul 15 PIL No. 117 signed approving ANDA IFB for improvement of water system in Cara Sucia, Ahuachapan Department (Comp III). Request dated 6/21.

Jul 15 PIL No. 118 signed approving ANDA IFB for improvement of water system of Puente Arce-El Jocotillo, Department of Ahuachapan (Comp III). Request dated 6/21.

1993 (cont'd)

Jul 15 PIL No. 119 signed approving ANDA IFB for drilling 13 wells and installing hand-pumps at Chiquihuat canton, municipality of Sonsonate III). Request dated 6/21.

Jul 15 PIL No. 120 signed approving ANDA IFB for drilling 9 wells and installing hand-pumps at Candelaria canton, municipality of Sociedad, Morazan Department (Comp III). Request dated 6/21.

Jul 23 PIL No. 123 signed approving ANDA bid award of C.1,489,183.50 for water well drilling and hand-pump installation at 27 sites in Tonala and El Presidio in Sonsonate Department (see PIL No. 33, 9/16/91, as modified by letter USAID/1RD/167 of 4/10/92). Request 6/29.

Jul 26 Project Implementation Committee approves ANDA/MU Re-structuring Plan. (later to be reversed.)

Jul 29 PIL No. 122 signed approving a re-programming of project funds to permit a $2 million increase to the LBII contract, extending it to 30 Sep 94 and adding $989,000 to Comp. V for water supply & sanitation activities in ex-conflictive zones.

Jul 30 PIL No. 124 signed approving ANDA IFB for improvement of the water system in San Antonio Pajonal, Santa Ana Department. Request dated 7/9.

Jul 31 LBII reports that ANDA Drilling Department has shown some improvement, but still at very low production. Problems: unmanageable bureaucracy, lack of procurement capability, lack of transport. The re-structured payment schedule, which was designed to provide incentives to drillers, has resulted in a virtual strike on three of the ANDA drilling rigs.

Aug 12 Amendment No. 4 to LBII Contract signed adding $1,999,731, extending the contract from 7/31/93 to 9/30/94, modifying the scope of work and level of effort, and making necessary administrative and personnel changes.

Aug 31 Amendment No. 8 to PRO-AG signed adding $3 million, bringing total obligations to $67,924,000.

Aug 31 LBII reports that many of the new wells were never disinfected after construction and are now testing as bacteriologically contaminated. (This was later corrected.)

Sep 3 PIL No. 126 signed approving MOP IFB for rehabilitation of 120 KMs of tertiary and rural roads (Comp II). This is first US dollar-funded construction contract in DGC.

1993 (cont'd)

Sep 11 Cooperative Agreement signed with CARE for implementation of WS&S activities under Comp. V (in ex-conflictive zones).

Sep 16 Formal closure of all 36 recommendations by DEVRES, Inc. in all 0320 Agencies.

Sep 20 PIL No. 134 signed approving ANDA award of C.1,362,128 to La Casa Castro, S.A. de C.V. for water well drilling and hand-pump installation at 19 sites in Santa Barbara, Chalatenango Department. (Comp III). PIL No. 105 of 7/17 approved IFB. Request dated 8/17.

Sep 20 PIL No. 135 signed approving ANDA award of C.2,054,366 to COMFISA for improvement of water system of Joya de Ceren, municipality of San Juan Opico, La Libertad Department. (Comp. III). PIL No. 110 of 6/29 approved IFB. Request dated 8/20.

Sep 20 PIL No. 136 signed approving ANDA IFB for improvement of water system in Olomega, municipality of El Carmen, La Union Department (III). Request dated 7/29.

Oct 7 ANDA President wrote to USAID Director asking for approval of ANDA/MU Restructuring Plan.

Oct 8 PIL No. 148 approved ANDA awards for piping and accessories: Velco Trading Corp $159,750 and Industrial Supply Corp $41,541 (Comp III). PIL No. 103 of 6/14 and letter USAID-IRD-317 of 6/15 approved the IFB. Request dated 9/13.

Oct 27 USAID Deputy Director responded to the President of ANDA saying USAID cannot accept the proposed increase in staffing for ANDA; USAID will be ready to meet soon. (ANDA told informally that the June 1992 agreement is off.)

Oct 29 ANDA/MU manager told MID that the President of ANDA would like to meet with USAID Director.

Oct 29 IRD sends letter to ANDA suggesting Nov 4 as date for meeting between the President of ANDA and the USAID Deputy Director. The primary topic to be the future of the WS&S program for rural communities. (Meeting took place as planned.)

Oct 31 LBII reports that ANDA regional offices, which operate independent of the MU, focus on hand-dug well improvements and excavation, monitoring of ANDA drilled wells, and

1993 (cont'd)

the investigation of sub-project sites. The regional offices see that each improved or excavated well has a functioning water committee, is chlorinated, and has been (or will be) sampled. The water committees are trained in pump and well maintenance. The progress to date has exceeded TA's initial estimations.

Nov 8 Price Waterhouse initiates audit of commodity management systems in all 0320 Agencies.

Nov 10 At the internal USAID meeting on the Semi-Annual Report for 0320, the Director agreed to a two-year extension of the Project Assistance Completion date (PACD) for water and sanitation only; with implementation limited to PVOs/NGOs and Municipalities.

Nov 22 A new USAID-ANDA agreement was signed: a) ANDA-MU will monitor existing contracts and gradually fade away; b) a new "regulatory unit" will be created, utilizing some of the excess MU personnel (USAID-IRD-728).

Nov 30 LBII reports the re-programming of the Multi-Year Action Plan was completed by ANDA-MU; many of the suggestions in the LBII revised staffing plans submitted to USAID were not accepted by ANDA and were not included in the revised plan. The TA team began working on the Transition Plan for changing MU into a rural water regulatory agency. The MU is virtually paralyzed.

Dec 3 The USAID 0320 Project Manager held a meeting with the President of ANDA regarding Project 0320 activities and the 11/22 agreement.

Dec 6 PIL No. 154 approved an ANDA award of C.957,541 to Technologia y Servicios for well drilling and hand-pump installation at 13 sites in Chiquihuat, Sonsonate Dept. (Comp III). PIL No. 119 of 7/15 approved the IFB. Request dated 9/23.

Dec 7 The President of ANDA wrote to the Director of USAID raising concerns abut two points in 11/22 agreement; a) re 4.2.2., don't cut ANDA/MU staff too deeply, too quickly; b) re 4.4., does not want to turn everything USAID purchased to NGOs and municipalities --he is concerned about the drilling rigs not being returned and not being maintained. (The agreement was annotated to say that it was subject to the observations in the President's letter.)

Dec 23 IRD replied to the President of ANDA: a) re 4.2.2., LBII will prepare a strategic plan for converting MU to a regulatory unit; b) re 4.4. LBII will study ways of strengthening ANDA Drilling Department.

1994

Jan 3 PIL No. 158 signed approving ANDA award of C.1,011,321 to Servicios de Perforacion for water well drilling and hand-pump installation at 9 sites in Candelaria, Morazan (Comp III. PIL No. 120 of 7/15/93 approved the IFB. Request dated 11/30/93.

Jan 19 PIL No. 161 signed approving ANDA award of C.1,048.797 to Eyco for water well drilling and hand-pump installation at 11 sites in Canton El Cacao, Sonsonate (Comp III). PIL No. 109 of 6/25/93 approved the IFB. Request dated 11/30/93.

Mar 20 National Elections held in El Salvador.

Mar 22 PIL No. 167 signed approving Amendment No. 1 to ANDA's 1993 Procurement Plan (Comp III). Request dated 3/4.

Mar 25 PIL No. 169 signed approving amendment to ANDA Comp III multi-year Action Plan extended to 9/30/94. Request dated 3/2.

Mar 31 LBII reports that MOH personnel installed 5 hand-pumps in wells improved by MOH personnel (their first under 0320). LBII TA devoted considerable time and resources to train MOH personnel. LBII also reports that the ANDA-MU has completed and distributed documents defining mandatory requirements for PVO water system design and construction inspection steps; these were developed with input from CARE, CREA, and USAID and they report that the Junta de Gobierno of ANDA approved the MU dissolution plan.

Apr 18 Amendment No. 9 to the PRO-AG signed extending the PACD to 9/30/96 for Components III and V for water supply and sanitation activities by municipalities and NGOs; Comp. I, II & IV to phase out 9/30/94.

Apr 24 Second Round of National Elections for President and Congress, El Salvador.

May 31 LBII reports that the new Regulatory Office (Rural Development Division) is now inspecting projects submitted by FIS.

Jun 3 PIL No. 172 re-programs funds to Comp. III & V per PRO-AG Amendment No. 9--water and sanitation to be carried out through expanded participation of PVOs/NGOs and Municipalities.

Jun 14 New President of ANDA assumes duties.

Jul 14 Cooperative Agreement signed with Project Concern, Inc. for the provision of WS&S services under Comps. III and V.

1994 (cont'd)

Aug 23 PIL No. 187 transmits USAID procedures to be followed for closeout of all USAID-funded HC Contracts.

Sep 8 Formal closure of all recommendations of audit by Price Waterhouse of commodity management systems in all 0320 Agencies.

Sep 13 PIL No. 185 transmits the new financing procedures related to the Audit Agreement signed by USAID, MIPLAN, and SETEFE.

Sep 22 PIL No. 188 signed extending the implementation period to 3/31/95 for specific sub-activities in Components I, II, and V not included in the two-year extension of the PACD by PRO-AG Amendment No. 9: a) installation of the Billing System for the CEL Metering Program under Comp. I; b) rehabilitation of the defense system of pier B at the Port of Acajutla by CEPA under Comp. I; c) road rehabilitation sub-projects being implemented by MOP under Comp. II & V; and d) reconstruction of the electrical system in the ex-conflictive zones being implemented by CEL under Comp. V.

Sep 30 LBII terminates in-country full-time TA presence and closes 0320 San Salvador office. However, Amendment No.6 to contract was signed to provide a six-month no-additional cost extension. The scope of work was supplemented to require the provision of short-term TA on an as-needed basis to support activities covered by PIL No. 188.

Oct 1 Management responsibility for 0320 WS&S activities assumed by USAID Office of Health and Education.

Nov 7 Amendment No. 7 to LBII contract signed to decrease the contract by $250,000 and readjust the budget accordingly.

ANNEX G

WOMEN IN DEVELOPMENT

GENDER ISSUES

There are many different worlds of women in El Salvador, so predictably, the impact of Project 0320 on women will vary by sector; roads, institutional strengthening, water supply and sanitation (WS&S) and health; as well as by the age, class, race, occupation, and location of the women.

The Project Paper states that women will be special beneficiaries through new employment opportunities and by a reduction of water-related chores. It was also estimated that "9,000 person-years of new employment opportunities will be provided," however, there was no gender-specific disaggregation, nor types of work specified. In the GOES agencies such as ANDA and MOH, which received support from Project 519-0320, women are well-represented. The Director of ANDA's Rural Development Division is a woman, and they employ several women engineers. Many of the department heads in MOH are women, some of whom have received direct support from Project 519-0320 in research, staffing and training. At CREA, two of the five engineers are women, and CARE stipulated that half the local field staff would be women, "not only to do their jobs but to serve as role models for rural women."

In fact, about half the field staff in CREA and CARE are female. These young, male and female, health promoters and community organizers are working in close partnership with each other and with the community. In its fourth quarterly report, CARE-El Salvador included the following chart with sex disaggregated data which clearly indicates that women are very active participants in their first four projects.

Sub-Project Participation: By Gender*

Sub-Project	Water Committee Members Male/Female		Warehouse Managers Male/Female		Health Committee Members Male/Female		School Children Trained in Health Male/Female	
Ereguayquin	4	2	1	-	3	6	12	15
San Dionisio	5	-	-	1	2	7	9	6
Nueva Granada	3	3	-	1	4	10	8	12
Villa El Triunfo	9	2	5	1	2	7	10	15
Totals	**21**	**7**	**6**	**3**	**11**	**30**	**39**	**48**
Percents	**75%**	**25%**	**66%**	**33%**	**27%**	**73%**	**45%**	**55%**

*Source: CARE-El Salvador Data

This data confirms the observations of Team Members during field visits to seven communities (CARE, CREA, and ANDA beneficiaries) where they met with women in five Water Committees. Most were holding responsible positions as treasurer or secretary and seemed more articulate than the men. Interaction among the members was frank and mutually reinforcing.

The one Water Committee without a female member was in Cantón Zapotitán, Ciudad Arce, La Libertad, where five caseríos had organized with CREA to obtain a gravity flow system. San José, the largest, had two representatives while San Jorge, Palomera, Cerro de Plata and Tempisque each had one.

Local Health Committees were usually chaired by women, with few male members (27% in CARE Projects). Women in all local committees were an interesting mix of young and old, many from female-headed households. With the field staffs, they were training local people, particularly women, in effective use of water and latrines. They had become "trainers of trainers."

The strongly participatory nature of local WS&S and Health interventions, with the involvement of women at all stages, has apparently strengthened their local status, in part because their traditional roles are better recognized, and also because the training they have received has prepared them for new roles with the improved WS&S systems in their communities. Involving the communities in this evaluation assisted the Team in understanding the present and past, as well as making recommendations for follow-up activities.

RURAL WOMEN IN EL SALVADOR

The recent study, Situación de la Mujer Rural en El Salvador, indicated that rural women in El Salvador work from 16 to 18 hours a day, from 4 am to 9 pm, depending on the size of the family. According to the study, a large percentage of the rural women's time is spent in household chores; cleaning, preparing food, caring for children and animals, working in the huerta (garden), and getting wood and water. The time spent varies with the size of the family and the distance to water sources. Only 20 percent of rural women have the use of a molino de nixtamal, while 27 percent still laboriously grind corn with stones. (Manzano Merino, 1994)

Research also showed that in the eight years between 1985 and 1992, the number of female-headed households increased 151 percent, from 251,431 to 632,065. Of these women 37.66 percent were living in rural areas. (Manzano Merino, 1994, P.28). These statistics reinforce the theory that the civil war left many widows as well as women abandoned by their husbands or compañeros due to emigration. (Ibid, p. 28)

Another finding was that 80 percent of rural women make the decisions on spending for household expenses. This is substantiated by data from other countries. The importance of women's decisions within the home in the allocation of household budgets cannot be over-emphasized. In Baldia,

Pakistan, it was the women who, as managers of water and sanitation within the home, decided to use their limited funds to invest in soak-pit latrines in order to avoid the expense of a weekly cleaner in addition to having the benefits of a clean latrine.

Research during the last few years has confirmed earlier findings (also noted in El Salvador) that in nearly every culture, women spend more of their earnings than men not only on improvements in WS&S, but also on items which will make life better for their children. A small increase in income made by women usually shows a higher resultant quality of life for the family, as measured by nutrition, educational level, health, morbidity, etc., than a large increase in income for men (Elmendorf, 1986).

Several early studies carried out under Project 519-0320 include important data for understanding of this sector and planning strategies to achieve goals and objectives. For instance, the findings so vividly displayed in the attached chart from the 1991 MOH National Baseline Study, indicate that over 80 percent of children in the Para-Central and Western regions defecated in the aire libre. The percentage dropped to under 60 percent in the Central region and down to 35 percent in the Eastern region.

In 1991, anthropological studies were carried out in four communities, three in the Western and one in the Para-Central region (Vielman, et al.). The findings corroborated the problems noted in the National Study. "In all the communities studied, children were not permitted to use the latrine. They defecated anywhere, in the house or yard. Mothers did not bother to pick up or cover the pupú, as animals, such as chickens, pigs, dogs or cats, ate it. In some cases, the mother did not clean the child at all, or if she did, it was with the nearest dirty rag, which was left on the floor or in a pile of dirty clothes."

"Only one informant in the four communities saw a casual relationship between human feces and diarrhea. None of the others associated any illness with excreta. People felt that fecal matter was dirty because it was human waste and had a bad odor. That of adults smelled worse than that of children, so was considered dirtier." The 1991 study also noted that "adults only rarely washed their hands after using the latrine, and then only with water."

This 1991 study, even though not in any communities serviced by the sub-projects of the PVOs/NGOs, provides useful baseline data for longitudinal studies of behavioral change as plans are made for final evaluation, or even better participatory monitoring and evaluation (Hurtado and Scrimshaw, 1988).

IMPACT OF WS&S COMPONENT ON RURAL WOMEN

No numerical or quantitative values can be attached at this time to the various impacts made on the lives of women served by facilities built under Project 519-0320. There have been several important studies but no systematic measurements of impact until recently by PVOs on several new sub-projects. However, it can be observed that the Project has made the following qualitative impacts:

- Reduced time and effort in carrying or otherwise providing water for the households.
- In many locations, reduced costs of water formerly purchased at relatively high price from vendors. Thus, more money is available for other necessities and/or more water available for domestic uses.
- Increased use of water, especially for hand-washing, bathing and general cleanliness.
- Reduced time and improved convenience in washing clothes and kitchen and eating utensils because of access to water in the home or nearby.
- New arrangements of facilities, in both old homes with cisterns and squatter-type temporary homes with packed earth outdoor kitchens, to utilize showers or hand-washing space near latrines.
- Improved health for entire families, but especially children, which relieves women of drudgery and the pain of caring for sick children.
- Decreased incentive for bearing extra children to replace those expected to die -- as diarrheal diseases become less frequent.
- Healthier children due to less nutritional loss from frequent attacks of diarrhea.
- Improved quality of life for the entire family, including more dignity and self respect.
- Greater privacy and safety provided by latrines, a need felt especially by most women.
- Potential income-producing activities as women, individually or in groups, increase production of flowers, vegetables or fruits using the organic fertilizer from the composting latrines and the gray waters or run-off from standpipes in special plots.
- Better nutrition for their children from increased income and/or food from household gardens, using excess water and fertilizer from composting latrines.

HEALTH IMPACT AND WOMEN

As was noted by Herbert Caudill (1992 Report) "Component III has an unprecedental opportunity to make a contribution to reducing infant mortality in El Salvador." (P.4)

Even though indicators for health impact, such as decrease in morbidity and mortality from diarrheal diseases, are impossible to measure accurately in such a short time frame, the following indicators, noted by the Team, show positive health impact.

- There is a strong feeling among the beneficiaries, especially the mothers, that their children are getting sick less frequently.

- More than half of the families visited commented on the fact that with safe water and latrines they would all be healthier.

- The Health Committees are actively involved in promotion campaigns in the homes and schools.

- The local volunteer health promoters are in touch with sub-project households.

- The MOH health promoters and/or the sanitary inspectors participated in the meetings of the Water and Health Committees and, according to CREA and CARE staff, meet regularly.

LATRINES

Health impact does not result from access to latrines but from effective use. Field observations by the Team confirm the regular and frequent use of latrines by the worn foot paths to them. Carefully tended flowers were around many of them and, in several instances, wooden banisters had been added so that the elderly and children could climb the steps more easily. (CARE has adapted the MOH model to make access easier by having the steps on the side instead of going straight up the middle of the front.)

Another important observation was the cleanliness of interiors, with containers of ash ready for use in the composting types, usually on the top of the second closed toilet seat. Several of the latrines had colorful MOH posters with instructions for use on the wall inside.

A possible negative impact on women and their families could result from emptying and using excreta too soon. Several families said that their composting latrines are filling up in three or four months, making the time of curing only six months, considered by many too short a time for safe use (CEMAT/IDRC, 1994). Both CARE and CREA are monitoring their installations to determine if less ash can be used or if the chambers are too small to allow for longer composting.

Even though there was early resistance to using composting latrines because of wide spread installation without adequate promotion or instructions, a recent (1994) MOH Draft Report indicates "72 percent proper usage of the 5,032 composting latrines built."

According to the Ministry of Health's Report on the National Workshop on Experience in the Use of Composting Latrines in El Salvador, the health promotor in the CREA Project in Cantón Piedras Blancas said that "95 percent of the households have a composting latrine (CL) of which 90 percent use them properly. The ones not being used are in lots with an uninhabited house." (P.8) She added that the her predecessor had attended 10 to 15 cases a month of diarrhea, but that her case

load was down to four or five diarrheas a month, mostly the children. She added that people were also breathing "uncontaminated air free of bad odors."

As noted above, any decrease in infant morbidity or mortality is a great saving of time, energy and suffering for mothers. With infant mortality as high as it has been and still is in El Salvador, there will be a tendency for parents to have larger families.

As Barbara Ward wrote in 1982 "So long as parents experience the death of their first children, they will continue to bring more into the world -- not out of folly or ignorance, but as an insurance for today's workload and tomorrow's old age." (Foreword to Down to Earth: Environmental and Human Needs, Erick Eckholm, 1982.)

Mothers, as the bearers of children, are also usually their caretakers during their illnesses -- laundering dirty clothes, giving ORT, etc. Women carry heavy loads which can be and have been decreased in many rural areas by access to safe drinking water and sanitation.

WS&S projects have the greatest impact on women, and women have the greatest potential for impact on WS&S projects. Without their involvement in rural communities, neither sustainability nor effective use can be achieved.

Now that the WS&S part of Component III of Project 519-0320, focusing as it does on the very specific problems of drinking water -- with its close links to sanitation, water-borne disease, primary health care, infant mortality and population growth, has been inherited by the Office of Health, emphasis should be placed on strengthening linkages with the other health-related USAID projects. An integrated approach at the community level within the rubric of primary health care, where women play important roles at all levels, will help establish continuity to the progress made so far in changing knowledge, attitudes, and practices related to water and excreta disposal.

ANNEX H

TASKS OF TA CONTRACTOR

[NOTE: The parts that follow in parenthesis are quotes from the LBII contract, Modification No. 4. That which follows each task description is the Contractor's report of its actions to respond to the task. This is from the Contractor's draft final report.]

"C.3.3. **Tasks**

The Contractor shall assist and advise the management units (MU) of MOH, ANDA, and MOP in resource management and project execution, train the local staff in the processes and skills required for project management, advise and assist in organization, reorganization, expansion and strengthening of the implementing institutions, and assist other GOES agencies and PVOs/NGOs and municipalities (only those involved in the project) on temporary assignments when authorized and directed by USAID. In particular, the Contractor shall:"

"1) Revise and update current operating procedures of ANDA and MOP to accomplish the increased workload of Project 519-0320. This includes current procedures for project planning, review, implementation, management information, and coordination to accommodate the expanded MU organization, giving special emphasis to contracting procedures for technical, professional and construction services."

The operating procedures within the ANDA-AID Management Unit were revised. Engineers were made responsible for projects from start to finish. Computers were made accessible to engineers for the first time. Rational contracting and bid evaluation and award procedures were implemented, but due to weakness in the ANDA-MU contracting office, much of the work was done by the TA Team. ANDA Management, unfortunately, resisted change and many beneficial changes were not implemented.

The TA Team provided extensive advice, assistance, and training to MOP's DGC-MU in developing this unit into a functioning management entity. This started in October 1990 after the arrival of the Roads Specialists, and continued until the Project Management Specialist-Roads departed the project in January 1994. The TA team helped organized the MU, purchased the initial computers and trained the personnel in their use. To speed progress, in early 1991, the TA Team actually produced the initial contracting documents and forms and got these approved for use. A total of approximately 1,200 kilometers of the 1,600 kilometers initially planned for rehabilitation in order to demonstrate MU proficiency were completed, and the shortfall was not attributable to the MU's performance, but rather to higher than estimated unit costs and other external factors such as the project re-direction to meet post-conflict needs.

"2) Plan in detail and facilitate the evolution of ANDA's regional structure."

A plan for the transition of the ANDA-AID Management Unit from an implementing entity to a regulatory entity was prepared in December 1993. The final version, which included an illustrative financial plan and methodology for fixing tariffs, was presented in February 1994. This plan was approved by the ANDA Junta de Gobierno in March and implemented in April. The unit is currently functioning with engineers and resources transferred from the Management Unit. The Regulatory Unit is now reviewing, approving, and inspecting all rural water and sanitation projects done in El Salvador. A final presentation of the Plan which focused on the urgent decisions to be taken by ANDA for the transition of this Regulatory Unit from USAID to ANDA financing was made to ANDA management in July 1994.

"3) Plan in detail and facilitate the evolution of the MOP regional structure to ensure a rational division of responsibility between the MOP-MU and MOP's existing regional structure."

This task was essentially completed with the nation-wide implementation of SIAMV in April 1993. Follow-up work on this task continued until January 1994, however, in order to assist the DGC in its reorganizations which resulted in the creation of a Maintenance by Contract Department, the elimination of the Construction Division, and an expansion of the Maintenance Division.

"4) Assist the MOP/DGC to prepare for its transition into a regular maintenance office for the national road maintenance system by May 1994 and initiate a pilot program for road maintenance by contract in January 1994."

The major component of this task was actually completed about a year ahead of schedule, coincident with the April 1993 SIAMV implementation which gave the DGC an operating maintenance management system. Follow-on work was required, however, as the Construction Department was eliminated at the beginning of 1993, and a new "Maintenance by Contract Department" was established. The lack of any funding for this organization in the 1993 Action Plan severely hampered its effectiveness in the first year. This lack of funding also restricted the pilot contract effort to minor roadside clean-up efforts.

"5) Provide training to the staff of the Management Units in Engineering Project Management to include sub-project design, reporting, monitoring, evaluation, physical and financial progress reporting, project tracking, project accounting, and construction project liquidation. This training should be completed for ANDA, MOP/DGC, and CEPA by April 1994."

Training was provided to the ANDA Management Unit staff in all aspects of engineering project management, including sub-project design, contracting, bid evaluations, progress reporting, tracking, change orders, and liquidation. Training included formal seminars in well and water system design, well contracting, and accounting, hands-on workshops in well rehabilitation and latrine construction,

overseas training in ground water hydrology and water system design, and daily on the job training in all aspects of project management.

For the DGC Management Unit, this training has been continuous through the course of the contract. As in Task #1, TA efforts evolved over time as the new Management Unit developed capability. The DGC-MU did accomplish a number of designs, both in-house and by contract. Reporting and monitoring, largely due to SIAMV, are more responsive than in the other departments of the DGC. By the end of the project, only construction supervision and evaluation could be considered inadequate, largely due to personnel turnover and the lack of training of replacements by the DGC.

"6) Coordinate the health education activities between MOH and ANDA by means of bi-weekly meetings throughout the life of Project."

Bi-weekly project co-ordination meetings which included participants from all entities (MOH, ANDA, USAID, PVOs, LBII, and SETEFE) involved in this effort of Project 0320 were held until May 1994. At this time the meetings were changed to a monthly schedule by mutual consent of all participating entities.

"7) Provide training in health education and community development."

The TA Team provided 38 person-months of long term Health and Sanitation Education Specialist technical assistance to the project. Additionally, 15.7 person-months of short term technical assistance also contributed to this effort (see annex B). Training was provided to different target populations with emphasis on a "train the trainer" concept which focused the priority training efforts of the TA Team on the Health Educators in the MOH Health Education Division supporting the Department of Community Health. In addition to training on educational techniques, special courses were conducted in areas such as preparation of training materials and educational videos. In addition to actual conduct of training classes, the TA Team trained the MOH in methods of identifying training needs through surveys, and in field supervision and exchange visits.

"8) Provide training to the water promoters in promotion of proper water usage, bookkeeping, water system operation and water system maintenance."

Training seminars were held for all ANDA Water Promoters in the following areas: proper water usage, formation of Water Committees, responsibilities of Water Committees, Water Committee Accounting Procedures, latrine construction and operation, water sampling and well rehabilitation. All training was accomplished by hands-on seminars and workshops. Construction workshops for latrine construction and well rehabilitation resulted in latrines being constructed and wells being rehabilitated. The ANDA Water Promoters and MOH Health Promoters passed this training on to the Community Water Committees.

"9) Develop and establish preventive maintenance systems for both water and sanitation and rural roads. Such systems should be operational by May 1994."

Extensive training in hand pump maintenance and repair was provided to all Water Committees by the ANDA Water Promoters. For roads, the nation-wide implementation of SIAMV, which followed years of TA effort in development and fielding the program, represented the final step in establishing the preventive maintenance system. The operation of the system has been proven over the past year. Unfortunately, the full potential of the system hasn't been realized because top management in DGC and MOP have not adopted the SIAMV reports for their management information needs.

"10) Develop and establish a Management Information System in ANDA, MOP, and MOH. These systems should be fully operational by January 1994."

A comprehensive management information system (MIS) was installed in the ANDA-MU computer system in 1991. ANDA never implanted this system, however. In November 1993 a second system was installed to manage all on-going projects. In addition well completion inventories were installed on the computers in the regional offices. Unfortunately, little interest in these system was demonstrated by ANDA and none have been maintained. LBII also provided a water quality data base for the ANDA laboratory and an aquifer test data base for the ANDA Drilling Department. Formal training in the use of these data bases was offered but little interest by either entity was demonstrated.

In DGC, the management information system for the road rehabilitation program work in progress is operating. It is effective and it is getting better as the staff of the Operations Department gain experience with the computers and refine the way that the inspectors interact with the contractors. This part of the MIS has been operating efficiently for over a year.

The MIS for road maintenance is built into SIAMV which is a full fledged management system developed by the TA Team for the DGC in El Salvador. This system was designed to assist in planning, organizing, directing, controlling and coordinating rural road maintenance. It is implemented but is not fully appreciated yet by the top management in the MOP and DGC. Therefore, it is not being adequately supported in the field.

"11) Provide training on financial auditing practices, accounting and control functions, and financial analyses. Develop standard procedures manuals for administrative, accounting and control techniques."

The Finance and Accounting Specialist began work with MOP/DGC, ANDA, and SETEFE in October 1990, and departed the project in July 1993 having completed training of the internal auditors in MOP, DGC, ANDA, SETEFE, and MOH. Classes were held in the agencies by the TA Team, which also arranged for two series of classes taught by members of the national professional auditor's association through FUSADES.

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In addition to teaching auditing practice and procedures to the internal and external auditors of the agencies, the TA Team instructed the water promoters and community water committee leaders in standard accounting and control functions and developed procedures manuals and forms which were provided to the promoters and water committees.

"12) Prepare background data on utility rates and employment policies to facilitate USAID's policy dialogue with the GOES."

The TA Team found very early that the temporary nature of AID funded positions within the GOES made sustainable institutional strengthening through those positions problematic. This and other personnel practices were discussed with and reported to USAID. Through specific studies, such as the revaluation of the capital plant of CEL and the decentralization of ANDA, the TA Team has provided background data on salaries, employment practices, costs, benefits, and rates for different public utilities. In addition the Team advised ANDA and CEPA in the fair costing for services. Discussions were also held with CEL, NRECA, and AID on electrical services rates and cost recovery.

"13) Complete the implementation by 15 September 1993 of close out of the outstanding commodity management recommendations on the Devres Report which were tasked to LBII in May 1993."

Roger Valle began work under an STO on February 15, 1993 to assist five GOES agencies to close out the recommendations of the commodity management system evaluations completed by Devres, Inc. in 1991. Following his review of status, a plan of action was prepared to close out the 27 recommendations still pending. Through intensive follow up and numerous meetings, the necessary actions were taken, and USAID was able to close the last of the recommendations in August 1993. The TA Team recommended continuing review by USAID and, if indicated, additional assistance to insure that certain agreed upon actions, such as the timely disposal of obsolete items and the automation of warehouse inventories are fully implemented.

"14) The Contractor will furnish up to 112 months of short term technical assistance in areas of specialization which the team will identify jointly with the GOES agencies and AID for any additional assistance not specifically identified above which may be needed to reach project goals."

A total of over 200 person-months of short term technical assistance were provided under the contract and within the budget provided. Approximately half of these were local El Salvadoran specialists.

"15) As part of the overall institutional building technical assistance, the Contractor will be responsible for assessing the adequacy of staffing and equipment, including vehicles within the implementing organizations and recommending any changes which may be necessary to the achievement of project goals."

This task was accomplished as an on-going effort during the course of the contract. Informal recommendations for changes in staffing and equipment were submitted directly to the GOES agency as the need became known to the TA Team. In addition, formal recommendations were submitted to the respective agencies or to AID whenever changes in functions or procedures made modifications of organizations or equipment desirable in the professional opinion of the TA Team. For example, the TA Team evaluated a proposed major equipment purchase proposal of AME, and recommended that most of the items were not needed and would be a drain on maintenance resources. A planning capability was recommended for the DGC-MU, and DGC was advised to establish an overall equipment fleet management capability. Also, detailed assessments were done of the resource and staffing needs of the ANDA Management Unit. These assessments were frequently revised and updated as the role of ANDA in rural water development evolved from implementation to regulation. These assessments were used in the ANDA-MU action plans and in the transition to the Rural Water and Sanitation Regulatory Unit.

The TA Team maintained full time offices in DGC, ANDA, and MOH for most of the contract period which facilitated day to day dialogue on these issues. In addition, short term technical specialists were used to develop specific recommendations for staffing and equipping the GOES agencies.

"16) The Contractor will be responsible for continuing to purchase equipment for the GOES counterpart agencies, consisting primarily of computers, software, office equipment and supplies, and training aids and materials. All purchases shall be made in accordance with AIDAR 752.7004, Source and Nationality Requirements for Procurement of Goods and Services and the necessary actions to initiate such procurement shall be completed no later than 31 May 1994. All other equipment required for the project shall be the responsibility of the host agencies."

The TA Team directly purchased equipment and materials totalling over $600,000 for the counterpart GOES agencies. Additionally, the Team assisted the same GOES agencies in the procurement of goods and services totalling over $8,500,000. This assistance included development of technical specifications, preparation of tender documents, identification of probable sources of supply/contractors, bid/tender evaluations, and assistance in award approvals, inspections and acceptance.

ANNEX I

RENOVATED WATER SYSTEM AT EREGUAYQUIN: A MICROCOSM OF SMALL WS&S DIFFICULTIES

On 11 November 1994, a formal agreement was signed for the supply of potable water and latrines for the Municipality of Ereguayquín, Department of Usulután, El Salvador by the Regional Director of the MOH, the Director of CARE, the Mayor, the representative of the Municipality (Síndico Municipal), the President of the local Water Committee and three other members.

At the Team's meeting on 7 December 1994 with the Water Committee in Ereguayquín, they were still full of pride about what they had accomplished and were looking forward to more training so they could keep the water supply system working in their community. The President of the Water Committee said: "At first the mayor didn't want to have anything to do with the project, but after he saw what we have accomplished he wanted to have the system run by the municipality, not by ANDA. He said that lots of mayors have good municipal systems. "We don't want our system to break down the way the old one did. At the last open town meeting, the community decided to have it run by the municipality, and we are going to become a Water Commission, not just a Water Committee. We're hoping to get more training from the Research Triangle Institute (USAID contractor working on municipal development). We think we can keep our system operating and maintained. The Mayor is happy and so are we."

There were many interruptions and exchanges between the Committee members. The meeting was held in the home of the representative of the Municipality, who had loaned a large front room as a warehouse for the project. She, as a teacher, helped explain the outreach activities of the Health Committee in the schools, both with teachers and children.

The above description is included in the report to try to share the excitement of a local water committee, which is spite of past failures and present problems, such as an early water system now inoperable and delays in installing latrines, seems to be confident that they, with the users, can keep their WS&S systems sustainable and properly used.

While Elmendorf stayed on with some of the Committee members, and talked with some of the community, Taylor inspected the old system and later we all went up to the new tank on the top of the hill to admire the installation and the breathtaking view. The health promoters and some of the Water Committee members were talking about making a park around the water tank. Another said "Let's plant more trees here to protect our water source."

The installation made by CARE in cooperation with the community replaced a system built by the municipality in 1990, which was originally planned to serve 40 households. The new system extends service to 1,200 beneficiaries. The Water Committee organized the volunteer labor of the community which consisted of 160 hours per family. The households with existing connections refused to help with the new work, but will be connected free of charge. The Water Committee announced that payments for new connections would be ¢1,400 or ¢1,500, depending on which side of the street the main pipe was laid. Water meters have been installed. The Water Committee is deciding what bank the account will be put in and exactly how to collect the money.

Some of the Health Committee members expressed difficulty in training household members in correct use of the latrines because they had not been installed, but they seemed very pleased with the response they were getting in the schools, where latrines had been upgraded and new water points installed.

LIST OF INTERVIEWS

EREGUAYQUIN

Focus Group Meeting - 7 December 1994

1- Rafael Antonio Rivas	Health Inspector in Environmental Health
2- María Bertha Sánchez de Rivas	Health Committee Member
3- Alejandro Castillo	Water Committee President
4- Norma Maritza Chavarría R.	Health Committee Member
5- Marvin Elizabeth Mejía Pineda	CARE Promoter
6- Melba Méndez de Funes	Water Committee Secretary
7- Norma Alicia Martínez	Health Committee

The two CARE engineers also present left before signing to visit the installations.

ANNEX J

RENOVATED WATER SYSTEM AT JOYA DE CEREN: A SECOND MICROCOSM OF SMALL WS&S DIFFICULTIES

The water supply system at Joya de Cerén is in some ways unique. However, experience there demonstrates why many WS&S sub-projects were not constructed under Project 519-0320 and also highlights both present and potential problems with small system sustainability.

Construction of the Joya de Cerén system elements -- a well, the operator's shelter, two ground storage tanks and improvements in the distribution system -- have been completed for three months, but are not operational because the contractor's claim for extra work has not been paid and electricity has not been hooked up to the pump. (USAID has approved the necessary change orders, and they are being considered in ANDA and the GOES.)

The original system was constructed by PLANSABAR about eight years ago and still is under PLANSABAR control. There are approximately 250 families who pay ¢12 per month for unmetered taps. Of the ¢12, ¢4 goes to the pump operator, ¢1 goes to a value operator (a critical necessity as discussed below), and ¢7 goes to PLANSABAR.

The cantón is divided into three zones, each zone receiving water at different times. The people receive water from the system for one and a half hours every two days. Thus the need for a regular valve operator. Also, the new pump station/well is being guarded by a voluntary watchman.

The original pump broke down over two years ago and the people were without water for approximately a year until PLANSABAR replaced the pump about a year ago after many requests from the Directiva del cantón (administrative body). The Directiva wants to take over operation of the system from PLANSABAR, but it does not agree on the basis that it needs the revenue to repay the IDB loan that financed the system. (If the PLANSABAR claim is valid, the revenue need can be met in other ways.)

The people report that PLANSABAR intends to charge ¢2,500 to each tap for the improved service that is to come, even though the improvements were made at no cost to PLANSABAR (or even ANDA which contracted the construction), and the people know it. No doubt this provides impetus to the desire of the Directiva to take over the system!

Joya de Cerén was the only PLANSABAR system renovated under the Project, out of approximately 40 originally identified to be repaired and/or improved. One major reason the others were not built was the difficulty in working with PLANSABAR, as exemplified at Joya de Cerén and by PLANSABAR's refusal to allow access to as-built plans of their systems.

This small system and its problems form a microcosm of the range of difficulties likely to be encountered in developing and sustaining small water supply systems:

- Rates charged for service are too low, although in the present Joya de Cerén case it would be hard to justify charging more because of the very low level of service provided. However, the rate obviously was not enough to maintain/repair the system. Apparently no cash reserve for repairs existed.

- A national level authority (PLANSABAR) not responsive to the needs of the people.

- Elected politicians who cannot, or do not recognize the need to, force national level bureaucracies to respond to the people or who are not brought into the search for a solution by the people.

- Difficulties in obtaining cooperation between GOES agencies in the absence of budgetary or legislative requirements that they work together.

- Poor contract administration delaying putting the new system in service, including slowness of payment to contractors.

ANNEX K

DRAFT SCOPE OF WORK FOR STUDY OF ANDA-CONSTRUCTED, PROJECT 0320-FUNDED, WATER SYSTEMS AND SANITATION (WS&S) FACILITIES

OBJECTIVES:

a) To ascertain if remedial actions are required to make the facilities functional and/or to ensure their proper usage; and

b) To provide feedback to PVOs and municipalities implementing Project 0320-funded WS&S activities.

METHODOLOGY:

Participatory field survey of each ANDA Project 0320 construction site (see note below).

TASK:

For each site, the Contractor will collect the following data:

Water Facilities

-- Type of construction (open well, hand pump, piped -- pumped or gravity fed)

-- Adequacy of construction

-- Whether construction is being adequately maintained

-- Owner

-- Is there a functioning Water Committee

-- Are adequate funds available for operations and maintenance

Latrines

-- Type of construction (Abonera, VIP, Pit, water seal porcelain, water seal fiberglass)

-- Adequacy of construction

-- Whether construction is being maintained

-- Public or private

-- Any environmental problems

Usage of Facilities

-- Has there been adequate community organization and hygiene education to assure proper usage and acceptance of the WS&S

-- What percentage of the targeted beneficiary group is using the sanitary facilities, broken down by sex for adults and between adults and children under six years of age

-- Percentage of clean facilities:

  -- toilet covered
  -- cleaning materials available, not deposited outside

-- Percentage of hand-washing practiced after use of latrine

-- Percentage of hand-washing before preparing food and before eating

Other

-- Is any PVO working in the community in the WS&S area

-- Is there an MOH health promoter resident in the community

NOTE: The field survey team should use the Rapid Assessment Procedures (RAP) developed for health workers and social scientists. (See Procedimientos de Asesoria Rapida, 1993, Susan Scrimshaw and Elena Hurtada -- available with R. Callejas in USAID/OHE). RAP not only assists in quickly gathering data, but it also encourages communities and individuals to deal with acknowledged problems because they will be active participants in data gathering.

The emphasis on a participatory approach linking the three major components of the Project -- water supply, health education and sanitation -- to data-gathering involves the beneficiaries and the local Water and Health Committees as researchers.

ANNEX L

EVALUATION TEAM RECOMMENDATIONS IN PRIORITY ORDER

The recommendations which follow are in priority order within each implementing agency.

1. Ministry of Public Works

Related to AME:

(a) that, with relation to AME's financial problems (inadequate funds for spare parts, vehicles and training), USAID:

(1) restore some of the cuts in AME's current Action Plan funding, especially for spare parts, specialized equipment and vehicles, and local training; and

(2) recommend to MOP, and agree to fund, a special study to prepare options for AME development over the next five years (including the budgetary implications of the options presented). It is assumed that the study could be funded under the LBII contract.

(b) that the USAID task LBII to provide short-term TA to work out the bugs in the fleet management part of the CFA in order to make it fully operational.

(c) that the GOES should modernize procurement procedures for production shops and projects in order to save time and money, and to prevent disruption of work. As a bare minimum and to start, the limit of the shop supervisors authority to purchase should be raised from ¢500 to ¢2,500.

(d) that AME should adopt a policy of procurement on the local economy from commercial sources, or rapid direct import, of all possible spare parts, with the objective of reducing parts inventories to an irreducible minimum. That will save time and money, and is the trend of modern management systems, including manufacturing. But first, a procurement system designed for minimum bureaucratic procedure and relying heavily on post-audit for control must be adopted.

(e) that the shop for AME should be built in San Miguel as soon as conditions permit. In the meantime, the highest priority work spaces should be built without waiting for funding for the entire complex.

(f) that the fax machine for the Santa Ana shop, not included when the last proposed AME Action Plan was partially approved, should be installed in order to expedite procurements, improve office management and reduce the time and cost of messenger trips between Santa Ana and San Salvador.

(g) that AME should investigate the feasibility of a cross-service agreement with the railroad for unusual problems that might be profitably farmed out to the railroad shops. The railway shops of FENADESAL are highly competent in making parts and improvising when necessary.

Related to MOP/DGC:

(a) that the USAID:

(1) remind the GOES in writing of the special covenant in the ProAg that "the Government of El Salvador will provide, during the life of the project and after the Project is completed, budgetary support to MOP at a level adequate to continue the system of regular maintenance of roads."; and

(2) request the GOES to increase funding for road maintenance, including for the maintenance of the equipment needed for this work.

(b) that the GOES develop a policy and formula for distributing funds to the DGC and the municipalities for road maintenance and improvement on roads of all of the lower classifications. In other countries such distributions are made from the gasoline tax, which is viewed as a road user charge. The fees road users pay in the form of gasoline tax are used to maintain roads in the same way that revenues collected from sale of electric power are used to pay for and maintain the electric power system.

(c) that DGC and MOP be urged strongly to make maximum use of SIAMV in order to assure the best feasible maintenance of the roads and, thereby, help to assure the sustainability of the road system.

(d) that MOP/DGC adopt as policy the contracting of road maintenance where possible and begin to develop the methodologies by which that policy could be carried out. To accomplish this the DGC should develop a plan of action and a schedule for achieving a fully funded maintenance program with 75% of the field work performed by contract by the year 2000.

(e) that the GOES continue to try to interest foreign donors and lenders in the funding of reconstruction of tertiary and lower classifications of rural roads along with funding for national primary and secondary roads, but standards for rural roads should be lowered enough to work greater lengths of road.

(f) that the contracting organization and processes developed in the DGC-MU be continued for larger projects under the neighborhood road activities under Project No. 519-0394.

2. CEPA

(a) That vertical timbers be added to Pier "B" at Acajutla as soon as possible, as parts of the pier are already in service. One estimate for repair of the system has been placed at $525,000. This should be confirmed or revised prior to funding.

(b) There is a serious deficiency in the design of the pier protection system at Pier "B" that, unless corrected, could lead to destruction of part of the system funded by this Project. The basic design is sound, but vertical timbers were left off the face of the fender system. These are timbers a vessel should come in contact with while tied up at the pier. As it is now, the horizontal structure of a ship, such as the bumper (rub rail) or the ship's gunwale, could lodge under the exposed horizontal walers and tear them and the energy absorbing rubber blocks off the pier.

3. WS&S Sector

For the USAID:

(a) The design of the USAID's proposed Social Sector Reform Activity should recognize that effective WS&S interventions are important to lowering morbidity and mortality from diarrheal diseases. (And, therefore, to reducing the case loads at regional health centers and hospitals.)

(b) That the work and financing of the PVOs should continue, and should be expanded and extended if possible. Improvements in WS&S are, as they were when Project 0320 was authorized, some of the highest priority health interventions possible.

(c) That the USAID should continue to closely monitor the work in the field; not only the design and construction, but the health education aspect and the community organization and management systems as well, to assure that the long term objectives of the Project are achieved. The Municipalities in Action and the Municipal Development programs probably can and should assist in the community organization effort.

(d) That the USAID should prepare a new Logical Framework for the water supply and sanitation activity for the remaining 18 months of the Project.

For the GOES:

(a) That the GOES should institutionalize by suitable legislation a national organization or organizations to make available to water system managements and small municipalities the appropriate TA, policy guidance and sources of financing, by both grants and loans.

(b) That all water committees, commissions, cooperatives, management entities, etc. should be so organized as to come under cognizance of the municipal government for oversight and regulation, whether or not the system is actually operated by the municipality. As the elected official closest to the people, the mayor is the first place the system's manager should look for assistance. And if they do not get results they can help vote him out at the next election. The relationship of the municipalities to independent systems should be set forth clearly in appropriate legislation.

(c) That the GOES should relieve ANDA of responsibility for WS&S outside the San Salvador greater metropolitan area as fast as the municipalities can be trained and have developed the capability to take over and operate their ANDA-owned systems. In so far as possible, delivery of service to the public should lie with the level of government closest to the people served that is capable of delivering those services. In the case of WS&S, that level should be the municipality or a local water committee.

(d) That ANDA should not allow its Rural Development Office, which regulates and sets standards for rural potable water supplies, to continue to wither until and unless this function is assumed by another entity.

(e) That the GOES should begin to study possible sites for potable water reservoirs. The water table, or water level in aquifers, in El Salvador is found to be dropping and in some places wells have ended up as dry holes. The time probably is not far away when urban centers and even small towns will have to begin to build relatively small surface water reservoirs and water treatment plants to assure their water supply. That has happened in other countries and probably will happen here. Water resources agencies in El Salvador probably are aware of this, but will want to put off facing the situation.

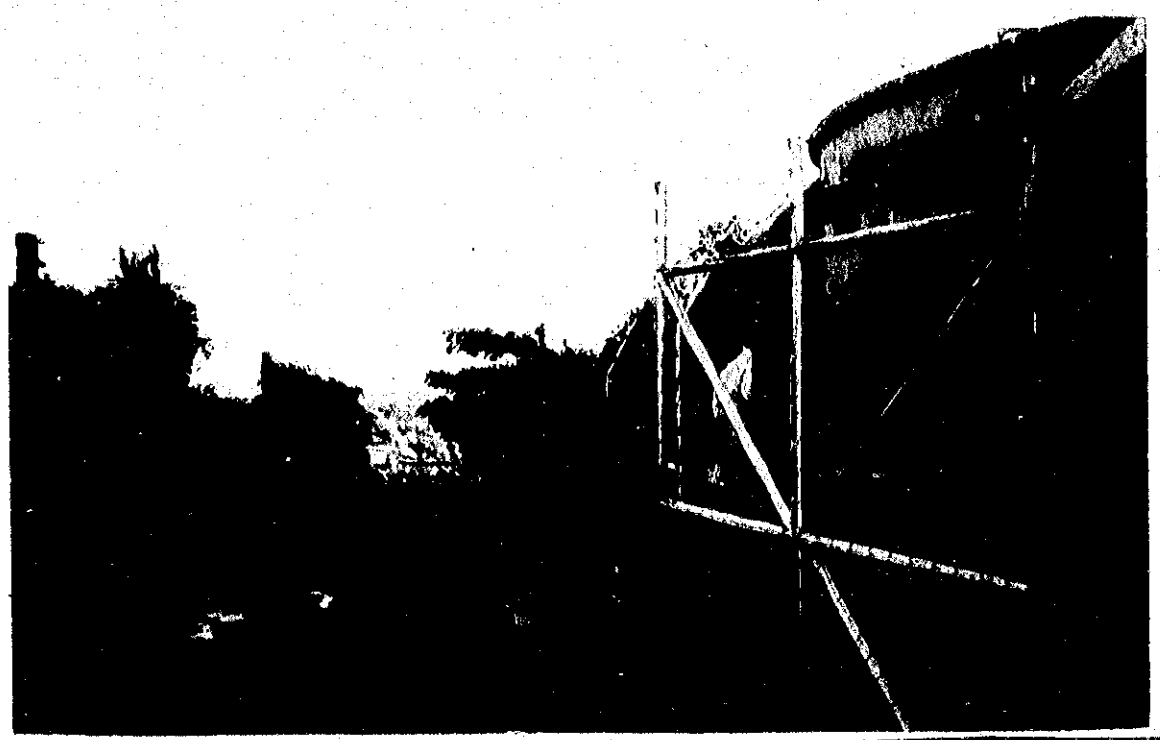
Site Visit Photographs: Rural Water and Sanitation

CREA, Zapotitán, Ciudad Arce, La Libertad
December 6, 1994

Water Committee members meeting with CREA and CCC staff.

During the meeting, PVC pipe for the street system was delivered.

CREA, Zapotitán, Ciudad Arce, La Libertad
December 6, 1994



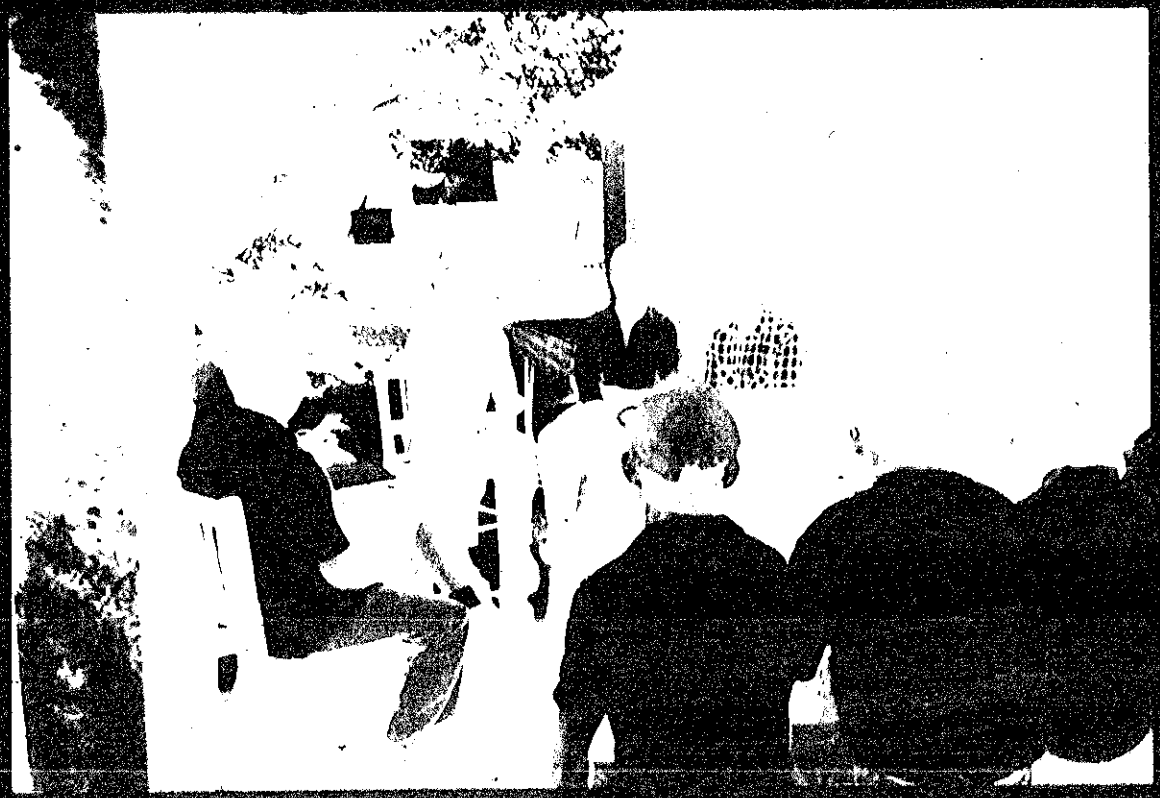
The new gravity feed tank, looking south.

A new kitchen sink.

CREA, Atiocoyo, Sr. Pablo, Tacachico, La Libertad
December 6, 1994

A recently emptied composting latrine, with the compost covered with ashes, logs and brush. Note the banisters.

CREA, El Señor, Quezaltepeque, La Libertad
December 6, 1994



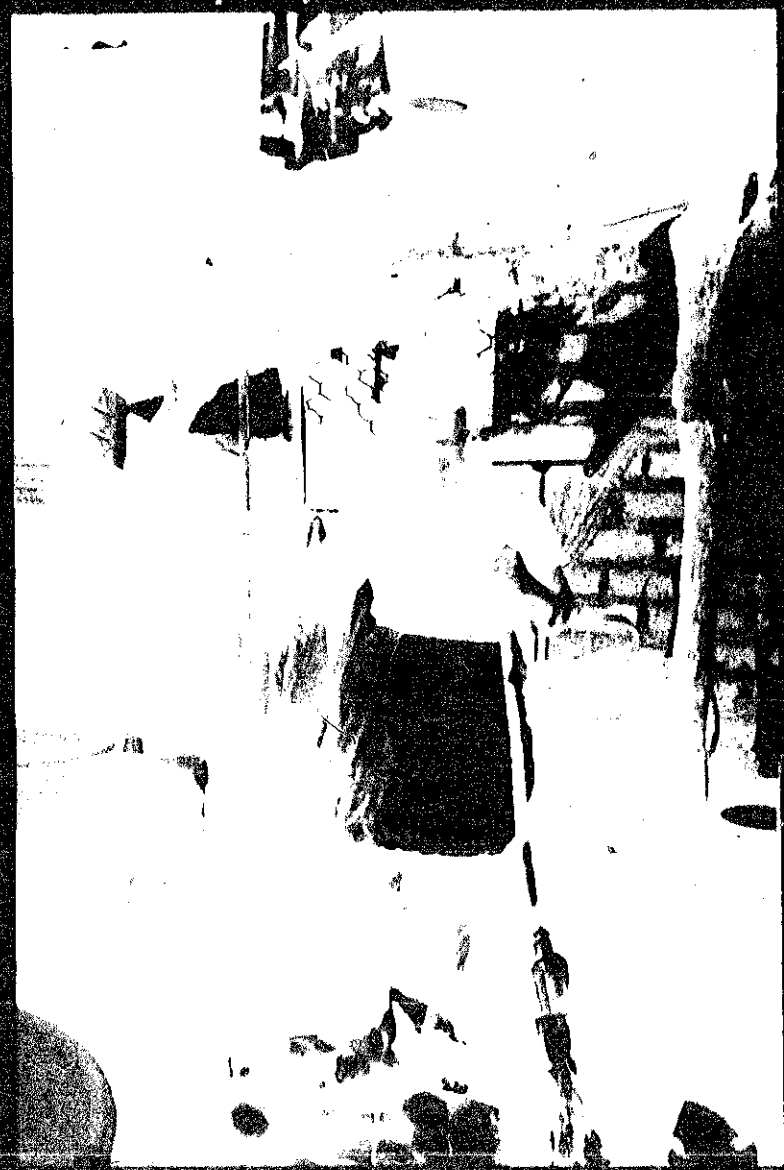
CCC staff meet with CREA staff and local committee members.

CCC Team members Elmendorf and Taylor inspecting a new pour flush latrine.

CREA, Atiocoyo, Sr. Pablo, Tacochico, La Libertad
December 6, 1994

Local committee members with the local CREA engineer.

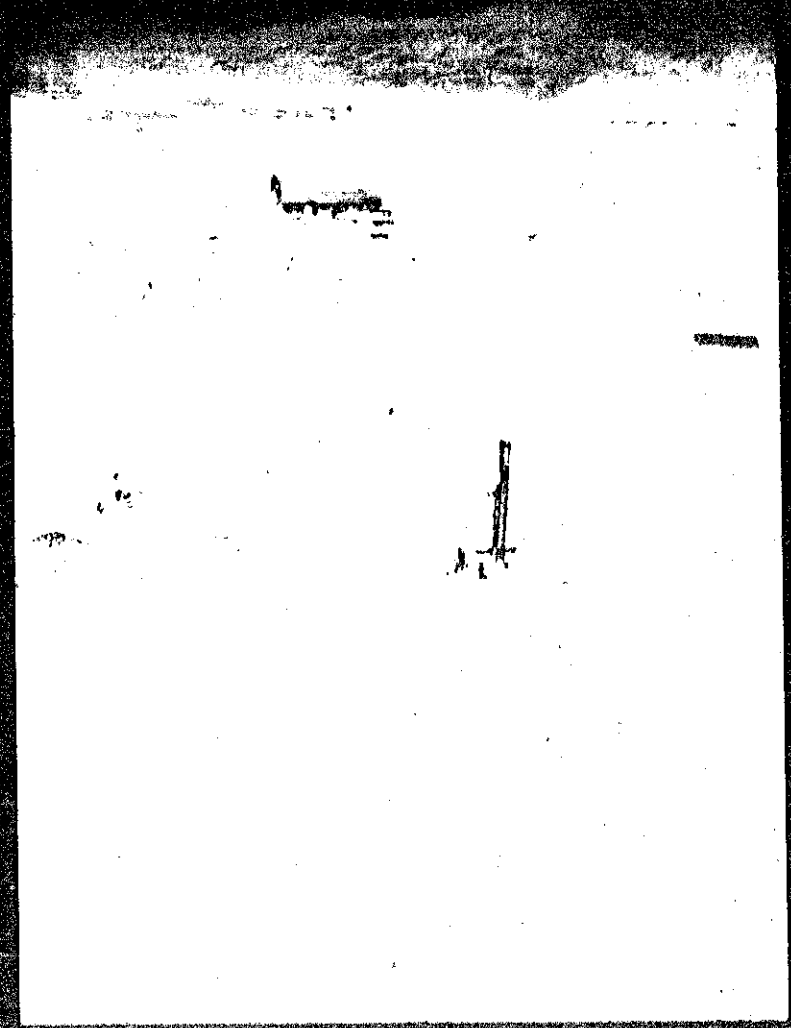
A housewife proudly demonstrates her modern shower.



CARE, Ereguayquín, Usulután
December 7, 1994

Look north on the hill south of town.

From the hill, the well under construction and the town.



Nueva Granada, Usulután, CARE
December 7, 1994

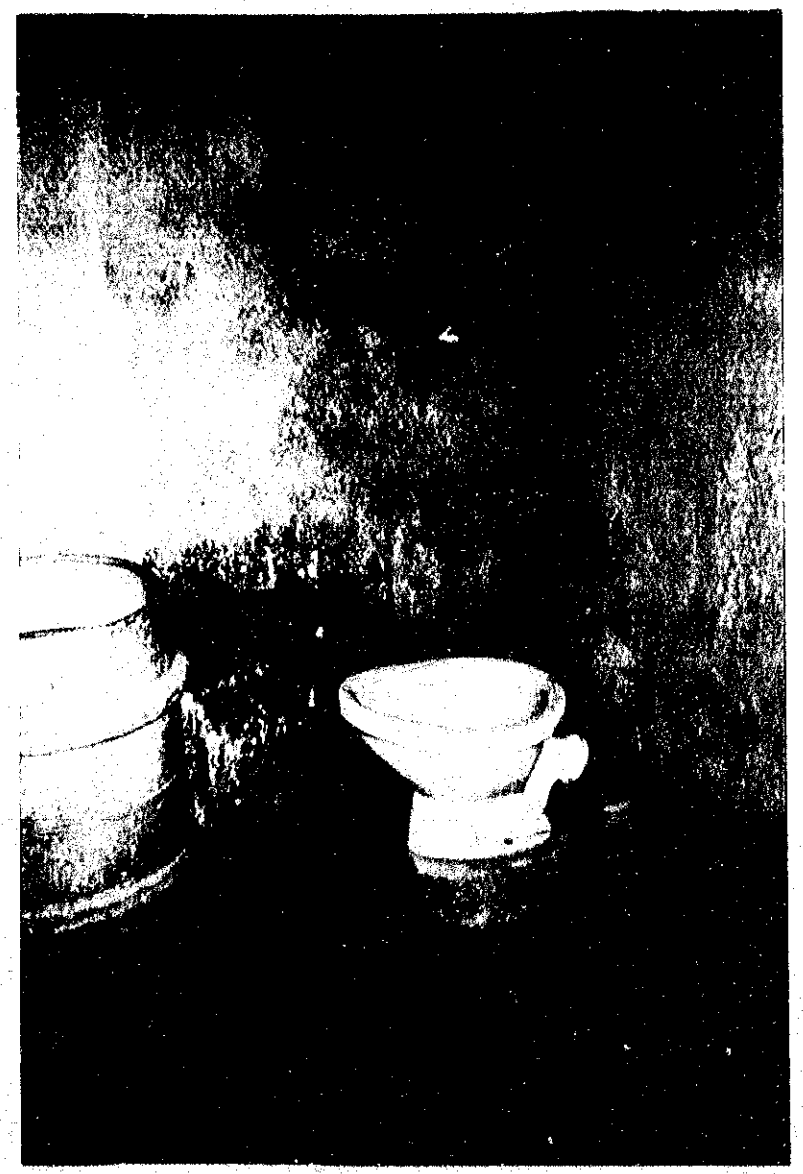
The new tank, nearing completion.

Water vendor in town.

CARE, Nueva Granada
December 7, 1994

Ana Beatríz Silva, Secretary of the Water Committee and José Davíd Cañas, CARE Engineer, are with local householder Pedro Armando Portijo, Chairman of the local Water Committee, and his wife.

Pour flush commode ready for use. New soaking pit to left.



Nueva Granada, Usulután, CARE
December 7, 1994

Mary Elmendorf (CCC) and Rafael Callejas (USAID/ El Salvador) with local CARE staff and Water Committee members. Sra. Marín de Rendón (in red dress) donated the land for the tank and buildings.

The old town well.

Ereguayquín, Usulután, CARE
December 7, 1994

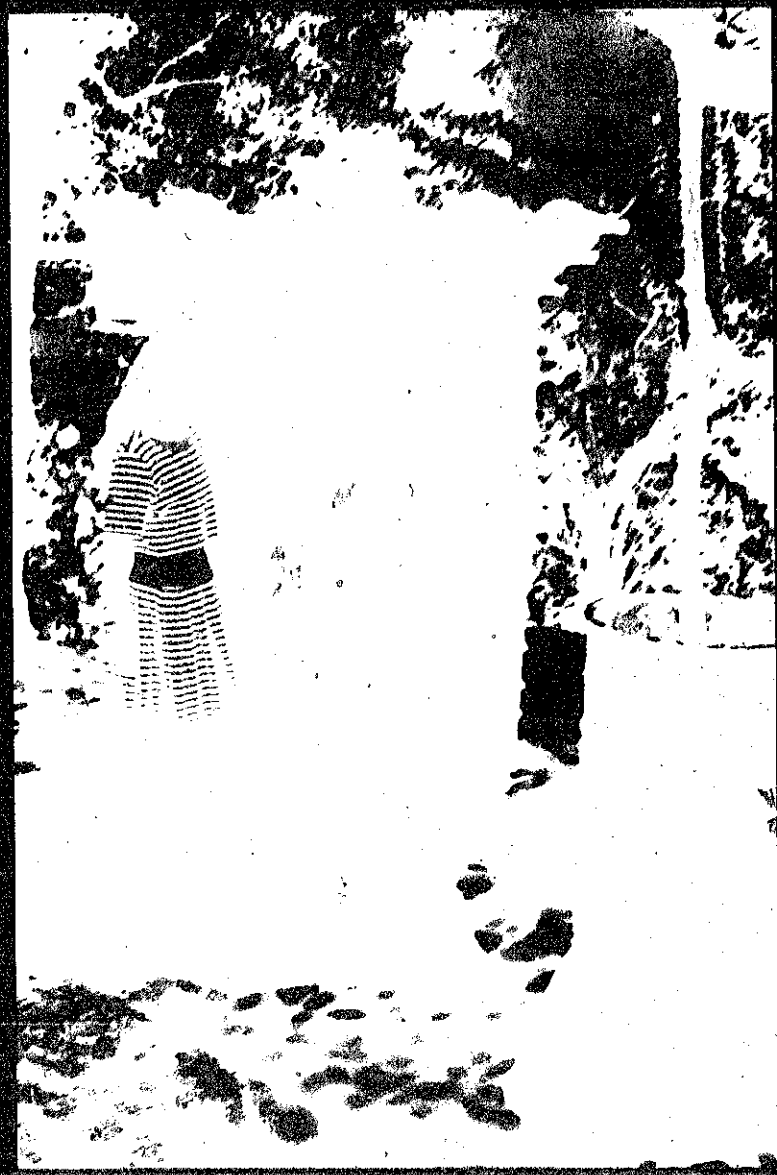
CCC Evaluation Team members, Elmendorf and Taylor, meeting with local CARE workers and committees. The gentleman standing is Rafael Callejas of USAID.

At the tank overlooking the well and town, the CARE engineer, CCC Engineer Lew Taylor, President of local Water Committee and CARE worker Marvin Meija.

CARE, Villa El Triunfo, Usulután
December 8, 1994

Local Health Committee Volunteer Beatríz Navarrete, her family and another volunteer on the left.

The family latrine, a pour flush.



CARE, Villa El Triunfo, Usulután
December 8, 1994

Local Water Committee Secretary, Rosa Cándida Diaz Castillo and CCC's Mary Elmendorf.

The backyard of a house in El Triunfo.