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BY THE U.S. GENERAL ACCOUNTING OFFICE
**Report To The Administrator
Agency For International Development**

A Troubled Project--Rural Water Systems And Environmental Sanitation In Peru

In 1980, AID authorized \$5.5 million to install water supply systems, sanitation facilities, and provide supporting activities intended to improve the health of people in 420 small rural communities in six health regions of Peru. An additional \$5.5 million was committed to the project in 1982 to extend similar services to 240 more communities in four other regions. The project is not being implemented according to the plans. By early 1983, only 30 of the 100 systems planned for that time were installed or under construction in three regions. In addition, little progress had been achieved in implementing the other components of the program.

GAO concludes that the (1) project is still in an early stage of implementation--2-1/2 years after being authorized, (2) scope of activities is too ambitious--considering the present capacity of the implementing agency, and (3) additional funds were committed without fully considering the problems causing slow progress. Although initial steps have been taken to correct the problems, GAO recommends that the project be closely monitored. If proposed changes cannot resolve the delays, and the accelerated implementation schedule for 1983 cannot be met, then the project should be partially deobligated and the scope of activities reduced to a manageable level.



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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

B-211720

The Honorable M. Peter McPherson
Administrator, Agency for International
Development

Dear Mr. McPherson:

In a forthcoming report we will discuss the Agency for International Development's (AID's) worldwide support of rural potable water supply and sanitation activities in developing countries. The report will focus on our evaluation of projects in Ecuador, Indonesia, Malawi, Peru, and Tanzania.

We are bringing certain issues relating to the Rural Water Systems and Environmental Sanitation Project (527-0221) in Peru to your attention now, because we believe timely remedial action could be taken. Detailed information is in appendix I.

SLOW PROGRESS INSTALLING SYSTEMS

Implementation is not progressing as envisioned in the project plans. Originally, a \$5.0 million loan and a \$0.5 million grant were authorized to install 420 water supply systems and complementing sanitation facilities in six health regions of Peru by 1985. The project intended to construct 100 of the water supply systems in four regions by the end of 1982.

At the time of our review, in January and February 1983, almost 2-1/2 years after the project was authorized, only 30 water supply systems were installed or under construction in three regions. The slow progress stems from difficulties in regionalizing the system design and management responsibilities to the local level, personnel shortages and losses, and policy differences. Problems such as the slow procurement and delivery of commodities and equipment, and the lack of planned technical assistance have also impeded progress. Other components were not being fully implemented--health education, operation and maintenance training, and special studies intended to improve the effectiveness of the project.

Peru recently agreed to revise policies and procedures which could redirect the program, and the AID mission

has proposed an accelerated implementation schedule. Implementing the new policies and procedures would be evidence of Peru's commitment to the goal and purposes of the project. We believe, however, that many of the problems we observed are the result of an overly optimistic project design coupled with Peru's lack of a technical and institutional capacity to implement the program.

POOR INTEGRATION OF WATER SUPPLY, SANITATION,
AND PRIMARY HEALTH CARE ACTIVITIES

The project goal is to improve the health of people in small rural communities. Delays in implementing other AID-assisted health care projects, however, have precluded the integration of these separate interventions. Our visits to project sites confirm a lack of coordination in providing water supply, sanitation facilities, and effective public health services.

A TROUBLED PROJECT IS EXPANDED

Despite the slow progress and problems, another \$5.5 million was committed to the water supply and sanitation project in August 1982. The purpose of the expansion was to install 240 additional systems in four more regions. The project life was extended to 1987. At the time of the amendment, less than 30 water supply systems were installed, regional warehouses were still under construction, and other components were not being fully implemented. Also, funds were not being disbursed in a timely manner. Now, conflicting cost estimates and the effect of Peru's inflation raise doubts concerning the total number of water supply systems which can be financed by the project. We believe that the causes of the slow progress were not adequately addressed at the time the additional funds were authorized for the project.

We recommend that you direct the Bureau for Latin America and the Caribbean's Pipeline Review Committee to closely monitor this project. If significant progress is not achieved by the end of 1983, the \$5.5 million authorized by the amendment should be immediately deobligated, and the project reduced to a scope which can be effectively managed by Peru. The accelerated implementation plan for 1983, described in the mission's written response to our draft report (app. II), should be the criterion to measure the progress of all components of the project. Deobligation, if needed, would be in line with AID policy already transmitted to the Congress and on which we have reported.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our evaluation of the Rural Water Systems and Environmental Sanitation Project in Peru was part of our worldwide review of this type of activity. Our primary objectives were to (1) assess how effectively U.S. financial assistance is being used to meet these basic human needs, and (2) examine how well the projects are being designed and implemented to overcome the technical and administrative constraints to the timely and continued delivery of water and sanitation services.

We selected the project in Peru to illustrate an activity (1) in an early stage of implementation, (2) employing a technology of gravity-fed household water connections, and (3) intended to build on the experiences of a completed AID-assisted project implemented in this country by a private and voluntary organization (PVO).

We met with AID officials in the Bureaus for Science and Technology, and Latin America and the Caribbean. We also reviewed relevant files and documents and gathered pertinent data available in Washington. In Peru, we talked with AID and host country project officials and an Inter-American Development Bank (IDB) official familiar with local water supply and sanitation issues. At the AID mission, we examined additional files, status reports, quarterly review summaries, and financial data. We also spoke with regional health officers and local project managers, and inspected project offices, warehouses, completed systems, and a system still under construction. At project sites, we spoke with community leaders and users (or potential users) of the systems. In both Lima and the region, we met with representatives of the PVO which implemented the completed water supply project partially financed by AID. Visits were made to five communities for that project. Our work was conducted in accordance with generally accepted Government auditing standards.

In addition to receiving written comments from the AID mission in Lima, we discussed the draft of appendix I with agency officials in Washington. Where appropriate, their comments were incorporated into this report.

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As you know, 31 U.S.C. §720 requires the head of a Federal agency to submit written statements on action taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs

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not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report. We would appreciate receiving copies of your statements to the committees.

Copies of this report are being sent to the Director, Office of Management and Budget; the four committees mentioned above; and the interested House and Senate authorization committees.

We appreciate the cooperation and assistance received from the AID mission and the headquarters officials during the course of this segment of our review.

Sincerely yours,

A handwritten signature in cursive script that reads "Frank C. Conahan".

Frank C. Conahan
Director

A TROUBLED PROJECT--RURAL WATER SYSTEMS AND
ENVIRONMENTAL SANITATION IN PERU

BACKGROUND

In Peru, an estimated 78 percent of the rural population has no potable water and over 98 percent of the households have no connections to functioning potable water systems and no sanitation facilities. The Government of Peru and external donors are attempting to provide these services to communities of 500 to 2,000 inhabitants. Since communities of fewer than 500 inhabitants are not targeted by those programs, AID approved the Rural Water Systems and Environmental Sanitation Project (527-0221) to meet their needs. The goal of the project is to improve the health and well-being of the rural poor by providing potable water (stressing gravity-fed systems with household connections), sanitation facilities, and health education.

Another aim is to strengthen the infrastructure of regional health offices by promoting the creation of permanent environmental health teams in Peru. In addition to the water supply, latrine, and health education elements, the design includes community participation, training, technical assistance, and special studies. The intention is to integrate these services with primary health care activities.

This 5-year project, originally authorized in September 1980, was intended to reach 420 small communities in six health regions. The scope was limited to a maximum of six regions, recognizing the funding limitations and the strengths and weaknesses of the administrative infrastructure. A \$5.0 million loan and a \$0.5 million grant were provided to Peru for this purpose. In August 1982, an amendment was approved to extend the scope by 240 additional water systems in four more health regions. An additional \$5.0 million loan and \$0.5 million grant were authorized to support the expanded activities. A total of \$11.0 million is now available to install 660 water systems in 10 health regions. The completion date was extended to September 1987.

Until late 1982, the project was managed by the Chief of the mission's Community Services Division. One month before our review, the mission was reorganized and new staff arrived to replace departing personnel and fill vacant positions--including the Director, Deputy Director, General Development Officer, and Health Development Officer who is now responsible for AID oversight and management of the project.

PROBLEMS AND DIFFICULTIES IN
IMPLEMENTING THE PROJECT

The following sections summarize problems which are affecting the successful implementation of the project, including:

- Slow design and installation of the water supply systems.
- Critical operation and maintenance activities which need more attention.
- Potential problems with the latrine component.
- Lack of technical assistance to plan and administer the project.
- Failure to conduct special studies.
- Ineffective health education activities.
- Delays in integrating water, sanitation, and primary health care activities.

The project, now in the third year, is experiencing serious problems. For example, the Government of Peru has not provided the personnel resources to fully achieve the regionalization and institution building objectives envisioned in the project plan because of low salaries and an austere budget. At the time of our review, during January and February 1983, AID and the host country implementing agency disagreed concerning the use of private sector engineering design services and the use of para-professionals. Responding to our draft report, AID said, in April 1983, that this issue was resolved at the policy level. Personnel, however, must still be recruited and placed in the regions. Other problems, such as the procurement of commodities and the slow design and installation of water supply systems are further delaying the delivery of badly needed water and sanitation services to the target populations.

Slow design and installation of water systems

Implementation has fallen considerably behind schedule. Originally, 420 water supply systems were to be installed in six health regions. The table below shows the construction schedule.

<u>Year</u>	<u>Number of systems</u>	<u>Number of regions (Cumulative)</u>
1981	30	3
1982	a 70	4
1983	90	5
1984	110	6
1985	<u>120</u>	6
Total	<u>420</u>	

a One hundred systems were planned through 1982, but only 10 were constructed.

The amended project proposes to install a total of 660 systems in 10 health regions.

Gravity-fed systems with household connections are preferred because of their effectiveness, feasibility, minimum maintenance requirements, and low cost. The convenience of the water and the contamination-free design also promote better health. This technology was originally estimated to cost no more than \$50 per person.

Decentralization of the design and management of the water systems to the health regions is another objective of the project. Under such a concept, permanent teams in the regions would be responsible for designing and installing the systems. Regionalization would be expected to provide timely and efficient responses to local problems, provide the resources to supervise a continuing operation and maintenance program, and institutionalize a capacity for implementing similar activities in the future. Additional personnel were to be hired for these duties before the start of project activities.

At the time of our review, 2-1/2 years after approval, many of these activities were not implemented according to the project plans. For instance:

- As of January 1983, the project was active in only 3 health regions; 10 water supply systems were complete and 20 more were under construction or awaiting material.
- The central and regional offices were not adequately staffed.
- Costs were higher than planned.

Initially, implementation was hampered by (1) delays in meeting the conditions precedent to disbursement of the loan (8 months), (2) strikes, (3) reorganizations, (4) personnel changes, (5) lack of technical assistance, and (6) extensive field visits. Now, procurement delays and personnel shortages within the host country implementing agency continue to impede progress. For example, AID received a request in May 1981, to procure vehicles needed to reach rural communities, but specification problems delayed further action until June 1982. The vehicles are scheduled to arrive during May and June 1983.

The procurement of pipe and related hardware for the systems presents another problem. A project official told us that the lack of pipe stretched the normal 3-month installation period of one system to a year. Two other systems scheduled for completion in 1982 are still awaiting material. Additional systems are designed and ready for construction in 1983, but still lack the needed material for installation. The problem

was due, in part, to the AID mission's lack of the expertise required to prepare the request for bids. This is now being done through temporary technical assistance. The mission is also considering the local procurement of commodities. This alternative could enhance implementation and access to spare parts, but may increase the cost of the systems.

Staffing problems in the regions and central office of the implementing agency are also hindering progress. Regional offices have not been fully staffed because trained and experienced personnel are not generally available in rural areas, and people are unwilling to relocate from the capital city. A low salary ceiling--relative to the private sector and other Peruvian Government agencies--creates problems in recruiting and retaining qualified personnel for the central office.

None of the regional offices we visited had the planned complement of permanent staff. The current staffing for the three offices is shown below.

Staffing for
Regional Health Offices

	Planned complement per plan (note a)	(Actual)		
		Huaraz	Tarma	Huancayo
Sanitation engineer	1	b 1	1	1
Sanitation design engineer	1	0	0	0
Topography specialist	1	3	0	0
Engineering draftsman	1	3	0	0
Sanitation technician	5	5	b 1	1
Laborers (skilled and unskilled)	4	0	0	0
Support personnel (note c)	9	1	3	3
Total	<u>22</u>	<u>13</u>	<u>5</u>	<u>5</u>

a Per regional office.

b On temporary duty.

c Secretaries, chauffeurs, storekeepers, accountants, and watch people.

Management and system design responsibilities have remained at the central level because the regional offices have not been fully staffed. This creates additional implementation delays. Regional personnel report that construction is also hampered by inaccurate central office designs which do not fully reflect local conditions.

Implementation has been further delayed by the loss of design personnel at the central level. The high staff attrition

is eroding the capability to produce the necessary designs. In 1980, there were 14 design engineers working in the central office. At the time of our review, six designers were on board, of which two were scheduled to leave. AID mission officials estimate that if the current staff concentrated on designs only for this project, they could produce plans for a maximum of 84 systems a year. Under the original project plan, approximately 350 systems must still be designed and 600 must be designed under the amended project. To meet the goal of 660 systems under the amended project, approximately 120 designs must be produced each year. An upcoming Inter-American Development Bank (IDB) project will place additional demands on the staff.

AID said that in April 1983, high Peruvian officials agreed as to the need to raise the salaries of the sanitation engineers, and use paraprofessionals in the regions to design the water supply systems. These agreed upon salary levels must now be met, and personnel must be hired, trained, and placed in the regions.

AID and Peruvian officials are also discussing the use of private sector engineering design services. If such an "interim solution" becomes a permanent practice, it would erode the regionalization and institution building purposes of the project and further increase the per capita cost of the systems. Per capita costs are now over \$70, which is about 50 percent above the average cost envisioned in the project plan. In December 1982, the AID Project Officer estimated that only 200 of the original 420 systems could be constructed at current per capita costs. An official of the host country implementing agency estimated that only 140 systems could be constructed if private engineering firms were used. AID and Peruvian officials are now considering reducing the number of household connections and increasing the number of public taps in order to construct more systems.

Proper operation and maintenance is critical to success

Proper upkeep of the systems--an important element of the project--ensures the continued delivery of the intended level of service. Water committees in each community are to be responsible for this activity. Each family is to contribute 3 months of user fees before the systems are installed to demonstrate their commitment to the project. Community maintenance supervisors are to operate and maintain the systems and periodically collect fees. The project design anticipates short courses for regional sanitation technicians, system operators, and community water committees. Engineers are to be trained in the administration, and operation and maintenance of the systems. Personnel responsible for promoting water and sanitation activities are to be trained in community development. Follow-up courses are to reinforce this training. Third-country training would

allow observation trips to similar programs in other Latin American countries. Records are to be maintained of inspections, repairs, and spare parts; and to ensure that fees are adequate to meet recurring costs. Technical assistance is supposed to help implement the operation and maintenance component.

We found that all communities had water committees, but that maintenance supervisors had been appointed in only one region. None of the communities had collected the advance user fees.

Organized training activities have not been initiated in any of the regions. Limited training is being provided, however, on an informal basis. For example, at one site we visited, construction personnel had instructed a member of the water committee in proper operation and maintenance procedures. In another region, the sanitation technician was providing informal training. None of the sanitation technicians, maintenance personnel, or water committee members have received training as planned. A regional engineer said that an organized training program would improve the long-term operation and maintenance of the systems. The mission is discussing additional third-country training with host-country officials.

Prior experience in Peru demonstrates that proper operation and maintenance is a critical element of water supply activities, yet difficult to achieve. For instance:

- The IDB has assisted in the installation of about 700 water supply systems in Peru. We discussed operation and maintenance issues with a Bank representative and were told that lack of attention to proper upkeep has contributed to the poor condition of many of those systems.
- In 1981, AID evaluated an earlier water supply project in Peru which was implemented by a PVO. AID's report¹ noted the need for an effective maintenance component. We visited five communities involved in that project to determine if maintenance was a problem and if there were any lessons which should have been emphasized in the Rural Water Systems and Environmental Sanitation Project. At one community, the treasurer said that user fees were not sufficient to pay for needed repairs. Another community did have funds, but had taken no action to correct water supply problems.

1 "Peru: CARE OPG Water Health Services Project", U.S. Agency for International Development, Impact Evaluation Report No. 24, Oct. 1981.

Inhabitants of a third community had not been trained in maintaining the system and were uncertain about how to correct a faulty component. In the fourth community, the PVO installed public taps. The residents expanded the system with household connections at their own expense and did not feel responsible for user fees. The fifth system was still awaiting material, and had not been inaugurated at the time of our fieldwork. Overall, in the communities which had functioning systems, we observed the inhabitants using the water. We also observed leaking faucets and improper drainage facilities. A total of 80 systems have been installed under this project. The Government of Peru has accepted responsibility for overseeing only six of these, because of poor construction and maintenance problems. The PVO is attempting to resolve this issue.

In commenting on the draft report, the mission informed us that operation and maintenance training would begin this summer. At that time, the adequacy of user fees to cover recurring costs will be evaluated. The mission did not comment on our observation that advance user fees, an indication of a community's commitment to the project, are not being collected.

Potential problems with latrine component

The latrine component of the project plan consists of two major activities: a special Latrine Study to be conducted during the first year, and the construction of public and private latrines in all communities receiving water systems. The purpose of the proposed study was to determine the reasons for the underuse and disrepair of existing latrines in rural communities. The results were intended to guide and modify further implementation of the latrine component and improve acceptance and maintenance of the facilities.

The Latrine Study has not been conducted. In April 1982, a team from the Water and Sanitation for Health Project (WASH)--an AID centrally-funded source of technical assistance--recommended that the study be made and that further construction of private latrines be postponed until the results could be analyzed and incorporated into the project. Nevertheless, construction of both public and private latrines is progressing. AID advised us that the study, including the testing of alternate designs, is to begin during June 1983.

At three sites we visited, latrine construction was underway. At one site, further construction was postponed because the high water table rendered the facilities inoperable.

Technical assistance to plan and administer the project has not been provided

The project plan provided for 24 months of long-term grant funded technical assistance to focus on (1) ensuring the adequacy of the initial planning process, (2) assisting in estimating and ordering material for both foreign and local procurement, (3) developing a supervisory system, and (4) improving the administrative mechanisms of the project. This was considered particularly critical during the first year, given the decentralized nature of implementation and the problems which could result from regionalizing project activities.

At the time of our review, the technical assistance programmed for (1) operation and maintenance, (2) the health education component (discussed later), and (3) planning and administration of project activities had not been provided. AID and the implementing agency disagreed about the cost, type, and source of assistance. In January 1983, the mission requested that candidates be identified to provide long-term assistance to the project. The mission informed us in April 1983, that the implementing agency has now requested technical assistance. A candidate has been selected to provide the services. Others are available if this individual is not fully acceptable to the implementing agency.

The project has, however, received other forms of short-term assistance not envisioned in the design. In January 1981, WASH assisted the Peruvian Government in developing the documentation necessary to meet the conditions precedent to disbursement of the loan. Another WASH team assisted in January and February 1982. The purpose, in part, was to review the design of the initial 30 water systems (on arrival the team found only 10 designs had sufficient documentation for review); assist in developing a seminar to coordinate health, water, and sanitation activities; review procurement plans; and assist in analyzing needs for the technical assistance.

Special studies not being undertaken

Eight special studies were to complement water supply and sanitation activities and provide evaluatory information. The Latrine Study was discussed earlier. A study focusing on water usage patterns in one region of Peru developed questionnaires which will be used to design and evaluate the health education component of the project. Data gathering, however, had not begun at the time of our review.

A System Efficacy Study was intended to evaluate the achievement of the goal of improved health. Initial activity was to involve the collection of base-line data prior to delivery of the services. Subsequent surveys would involve communities receiving primary health care, water, and sanitation

services; communities receiving a mix of these services; and communities without any of these benefits. An analysis would then determine the effect of specific interventions and guide future policy decisions. At the time of our review, no action had been taken to obtain the base-line data. We were told that this would begin in late 1983, and be funded from another AID-assisted primary health care project. The water and sanitation project allotted funds for this survey.

Other studies intended to identify (1) alternate methods of providing adequate water treatment, (2) alternate methods of providing potable water, (3) the private sector role in water projects, and (4) roles for paraprofessionals in system design and construction and to develop a study of hygiene in public schools have also not been undertaken. We were told that alternate water system designs will be tested by the technical assistance engineer as opportunities arise. The implementing agency has also proposed several engineering studies which are now being evaluated. At least one will be initiated in August 1983.

On two occasions, the mission received advice from WASH regarding the special studies. In a January 1981 report, WASH suggested that the Latrine and System Efficacy Studies be consolidated since both were based on similar methodologies. In April 1982, they recommended that further construction of private latrines not proceed until the Latrine Study was completed. As discussed elsewhere, facilities are still being installed at project sites. Other studies recommended by WASH will be reviewed. These and other studies will be carried out during 1984.

Health education needs more attention

A health education component was intended to emphasize the relationship between health, disease, and sanitation and to encourage the proper use of the facilities. The Water Use and Latrine Studies, and technical assistance were to provide the strategies for the health education activities.

In one region we visited, sanitation technicians met with community representatives to explain the benefits of the water supply systems. The information was to be relayed to the rest of the community, and children were to be taught proper health habits in the schools. We observed beneficiaries washing clothes and dishes in the original source of water, collecting water from the new system with unsanitary containers, and children drinking from the disposal troughs.

In another region, the engineer and sanitation technicians promote water and sanitation activities before the facilities are constructed to ensure the cooperation and participation of the communities. Children are also instructed by the regional hospital staff.

Technical assistance was to support this component. The effort was to draw on the Water Use and Latrine Studies and guide the development of manuals, improve the capacity to produce audio-visual material, and implement a communication system. As of our review, no technical assistance had been provided for this purpose. AID said, in April 1983, that during this summer, technical assistance is planned for training primary health care workers to provide health education in one of the regions where water supply systems have been installed.

Delays in integrating water, sanitation,
and primary health care activities

As originally designed, the project was to provide an incentive for promoting integrated potable water, sanitation, and health education with primary health care programs in rural areas. At the time the water and sanitation project was approved, Peru's primary health care strategy was supported by the AID-assisted Extension of Primary Health Project (527-0219). At the time the water and sanitation project was amended, AID was also supporting an Integrated Health and Family Planning Project (527-0203).

Implementation delays in the water supply and sanitation project and the health care projects have precluded effective integration of these separate health interventions. The Extension of Primary Health Project was approved in September 1979, and as of January 1983, about 24 percent of the \$5.8 million loan and 13.5 percent of the \$1.4 million grant were disbursed. At that time, the project was about 75 percent through the planned period of implementation. The Integrated Health and Family Planning Project was approved in April 1981, and as of January 1983, none of the \$4.0 million loan and 2.7 percent of the \$6.8 million grant were disbursed. As of that date, this project was about 25 percent through the planned period of implementation. Despite the delays, training of the health workers has been underway. Improved implementation, however, would enhance integration and public health measures.

In November 1982, the Bureau for Latin America and the Caribbean's Pipeline Review Committee noted the slow disbursements of the health care funds. They cautioned that partial or full deobligation might be warranted.

A TROUBLED PROJECT IS EXPANDED

Despite the implementation problems, the Rural Water Systems and Environmental Sanitation Project was amended in August 1982 to provide another \$5.5 million for 240 additional potable water systems, additional latrines, and health education in four more health regions. The 1982 amendment raised the total funding to \$11.0 million for 660 water supply systems in 10 health regions.

The proposal to amend the project stated that the original design was still technically, economically, socially, administratively, and financially feasible. Consequently, similar analyses were not conducted for the extension, since the design did not differ significantly from the original plan. According to the amendment, the implementing agency had also demonstrated its technical and institutional strength and a capacity to provide substantial counterpart funds.

Many problems were either apparent or developing prior to the extension. For example, when the amendment was signed:

- Less than 30 of the water-supply systems had been constructed.
- Less than 2 percent of the original \$5.5 million had been disbursed with 40 percent of the initial 5-year life of the project elapsed.
- None of the three regional offices had been fully staffed.
- None of the technical assistance and little training had been provided.
- No effective integration with primary health care activities had occurred.
- None of the vehicles necessary for timely implementation had been delivered.
- None of the data gathering for the special studies had been undertaken.

In addition, the two WASH reports highlighted several of these issues and suggested that corrective action be taken to solve the problems. None of these recommendations, however, had been implemented at the time of the amendment.

Our evaluation in January 1983 showed that problems still hamper the project. We believe that these issues show that the AID assessment of Peru's willingness, and technical and institutional strengths to implement the expanded project may have been overly optimistic.

In November 1982, two months after the project was amended, the Latin America and the Caribbean Bureau's Pipeline Review Committee cautioned the mission that partial or full deobligation of this project may also be warranted if significant progress was not achieved in the near future.

CONCLUSIONS

Potable water and adequate sanitation are critical needs in rural areas of Peru. Many people in small communities lack

these essential services. The Government of Peru recognizes these needs, and the AID-assisted Rural Water Systems and Environmental Sanitation Project is attempting to provide these services. We believe that any project which intends to regionalize and institutionalize the design, installation, operation, maintenance, and management of rural water supply and sanitation facilities; implement supporting activities; and integrate these services with ongoing primary health care programs is a major endeavor. This project, however, is not progressing well. We believe that many of the problems are the result of an overly optimistic project design coupled with Peru's lack of a technical and institutional capacity to implement the program. As a result, implementation is far behind schedule, and funds are not being disbursed in a timely manner. The problems are delaying the delivery of planned resources and services to the intended beneficiaries.

Based on the limited number of water supply and sanitation facilities which have been installed after more than 2-1/2 years of implementation, we believe the planned scope of the project is too ambitious. It is doubtful that 420 water supply systems envisioned in the original plan will become a reality. Excessive per capita costs may also limit the number of facilities which can be installed under the project. Construction is being further hampered by procurement delays. The local purchase of commodities could improve the pace of implementation and improve access to spare parts, but may also increase the cost of the systems and further limit the scope of the project.

Regionalization of project activities does not appear to be a priority of the Peruvian implementing agency. None of the regional offices are staffed with the number and type of personnel envisioned in the project plan. Low salaries have resulted in the loss of many system designers to other higher paying opportunities. As a result, water systems cannot be designed to keep pace with the implementation plan.

Furthermore, we believe the goal of improving the health of the target population is being threatened by the lack of emphasis on essential supporting activities. For example, proper operation and maintenance procedures and adequate revenues to support the upkeep are critical to the sustained delivery of these essential services. Operation and maintenance and the collection of advance user fees need more attention. The same problems concerning the operation and maintenance of prior water supply facilities financed by AID and IDB are beginning to appear in the current project. Lessons learned from the impact evaluation of the completed AID-assisted PVO project are not being applied to this ongoing effort. Also, the WASH recommendations have not been fully implemented.

The lack of a viable health education program is another serious impediment to achieving the goal of the project. Our

visits to project sites confirm that the current informal approach to health education is not effectively teaching the inhabitants about the relationship between health, disease, and proper sanitation practices, or changing their behavioral patterns. Special studies intended to guide the health education component and the design of sanitation facilities have not been completed. Thus, the project is continuing to install facilities without an adequate understanding of the usage patterns and attitudes of the people the project is intended to reach. In the past this has led to the installation of facilities which eventually fall into disuse or underutilization.

The project plan provides for technical assistance to (1) organize and plan information and control systems, (2) design and test maintenance procedures, and (3) strengthen community education and organization. We believe that if AID and Peru had agreed on the form of the assistance in a timely manner, many of the problems this project is experiencing may have been avoided.

We concur that additional benefits could be realized by integrating water and sanitation activities with other AID-assisted primary health care projects. These programs, however, are also experiencing implementation problems.

At the time the water supply and sanitation project was amended, AID and Peru had not resolved problems concerning staffing of the regional offices, design of the water supply systems, procurement of commodities, and implementation delays in the AID-assisted primary health care projects. Also, construction was far behind the original plan, critical supporting activities were not being effectively implemented, and no progress had occurred in other essential elements, because AID and Peru could not agree on how to proceed. We believe these issues were not fully considered at the time the project was extended.

AGENCY COMMENTS AND OUR EVALUATION

We provided copies of our draft report to the AID Mission Director, and Bureau for Latin America and the Caribbean personnel familiar with the project. The mission provided a written response to the draft report (app. II). We also met with agency representatives in Washington and discussed the issues, conclusions and recommendations. The draft report was changed or information was added to reflect developments since our visit to Peru between January 20 and February 4, 1983. The following summarizes major comments from the mission and Washington officials, and our evaluation.

The mission agreed with our observation that many of the project components--health education, operation and maintenance assistance, the base-line study, and others--had not been implemented at the time of our review. They attributed the delays to

operational issues, rather than a lack of a commitment on the part of Peru. They stated that all components, and the procurement of pipe, other material, vehicles, and equipment will be initiated by the end of 1983.

Policy changes toward regionalization

The mission informed us that Peru recently launched a study intended to recommend that the salaries of the sanitation engineers be raised to a competitive level. The intent is to re-staff the vacant positions. We were told that the salary increase, and an incentive for personnel to relocate to rural areas, would be financed through the P.L. 480 Program.

Peru also agreed that paraprofessionals would design the water supply systems at the regional level under the supervision of the sanitation engineers. Training for the paraprofessionals is to begin in mid-1983, using AID-sponsored technical assistance. By the end of 1983, the design function is to be fully regionalized. Also, the review and approval process will no longer be centered in Lima.

The implementing agency has now apparently agreed to a basic purpose of the project--regionalization. We believe they should now implement this new policy--hire additional staff, relocate personnel to the rural areas, train paraprofessionals, and redirect the focus to the regional level.

We believe that the use of P.L. 480 funds is an interim answer to a problem which requires a long-term solution. We do not agree that this demonstrates Peru's commitment to the project, because it raises doubts about the ability and willingness of the implementing agency to sustain project activities after AID financial support terminates.

Accelerating the installation of water systems

We were informed of plans to install 90 additional water systems, of which 42 are now designed, by the end of 1983. The mission also intends to disburse more than \$1 million this year (\$1 million in loan funds and \$600,000 in counterpart funds have also been budgeted for the same period). In each subsequent year, 15 water supply systems are to be constructed in each of the 10 health regions.

We believe that the plan for 1983 is overly optimistic, given the (1) slow progress to date, (2) start-up time to hire the additional engineers, (3) additional time needed to train the paraprofessionals, (4) problems the implementing agency has experienced in relocating qualified individuals to the rural areas, and (5) slow delivery of commodities to construct the first 30 systems. We also believe that the goal of building

15 systems a year in each of the 10 health regions is a formidable objective for an organization which, until now, has only been able to install 10 systems in 3 regions after almost 3 years. The project, we believe, is still in a very early stage of implementation.

Number of systems the project
can finance is doubtful

According to the mission, a recent analysis of the average cost of 10 completed systems in one region was \$50 per person. This agrees with the original estimate for household connections. In this region, however, four of the communities received public taps rather than household connections. Public taps were originally estimated to cost about \$30 per person. If all of the communities in the mission's analysis had household connections, we believe the cost would likely exceed \$50 per person.

The mission has been advised that the \$70 per person we report is a reasonable cost for rural water systems. They were further advised that the cost for similar systems in other countries range from \$27 to \$150, with the average being \$90 per person.

The mission used the recent cost analysis--plus the availability of the contingency fund, and the enormous need for village water supply systems--to maintain the aim of installing 660 systems. It is not clear how much of the contingency fund will be available for construction. In addition to the water systems, the fund must also cover the increased expense of vehicles, equipment, technical assistance, training, special studies, evaluations, and other support. The bulk of the contingency fund is based on a 25 percent inflation factor. According to the latest Foreign Economic Trends report for Peru (August 1982) prepared by the U.S. Department of Commerce, inflation exceeded 60 percent for the fourth consecutive year.

The original project provided \$5.5 million in U.S. financial support to install 420 water supply systems. The amendment proposed to install another 240 systems for the same amount of funds. The decrease in the number of systems was attributed to, among other factors, an increase in the cost of construction material, including pipe. Information provided to us by the Chamber of Commerce in Lima confirms that costs are increasing. For example, the cost of 5 meters of pipe without fittings increased 360 percent between December 1979 and December 1982. A mission official told us, however, that the cost of pipe is now decreasing.

In Peru, we were told by both mission and implementing agency officials that the number of systems envisioned in the revised project probably will not be achieved. According to an

AID program specialist, only 170 of the original 420 systems can be installed if the cost of the first 30 systems prevails. An official at the implementing agency said that if private sector engineering services are used to design 80 systems, only 140 of the systems can be constructed. According to the mission's April 1983 status report, the option of using the private sector to design some of the systems is still a viable alternative.

The conflicting cost reports, uncertainty concerning the adequacy of the contingency fund to support future construction, the impact of inflation on the cost of locally procured commodities, the reduction in the number of systems to be constructed by the amended project, and our discussions with mission and implementing agency personnel raise doubts concerning the total number of systems which can be installed by this project. We have not questioned the need for village water supply systems in Peru. We do believe, however, that the number of systems to be installed under this project needs further analysis.

Integrating primary health care and water supply activities

In response to our observation that implementation delays have precluded the integration of AID-assisted primary health care activities with the rural water supply project, the mission responded that training of the village-level health workers has been underway for several years and integration was taking place "at least on a geographic level." Although training may have been accomplished, we saw no ongoing public health campaigns. An AID mission official knowledgeable about the implementation of the primary health care projects confirmed our observations. The history of disbursements is further evidence of the implementation problems. The mission plans to strengthen these programs.

Additional funds committed without adequate analysis

The mission did not agree that the additional \$5.5 million was committed to the project without adequate evidence of success under the initial grant and loan. They believe the extension was justified because of the

- need to maximize the health impact in the regions involved in the primary health care projects;
- numerous unmet requests from communities without water systems;
- opportunities to use the local development corporations to decentralize design, construction, operation and maintenance; and

--other benefits to be realized by using the private sector to design water systems and train paraprofessionals.

The mission stated that the central office of the implementing agency was adequately staffed at the time of the extension. They also stated that the first three regions were operational and fully staffed at the time of the amendment.

We agree that there is a need for village water supply systems in Peru. However, we still believe that the additional funds were committed without an adequate analysis of the problems which were impeding progress. For example, the

- design function was still centered in Lima;
- few of the water systems were fully constructed;
- technical assistance, training, special studies, and health education components were essentially inactive; and
- procurement and delivery of material and equipment was slow.

Also, the first three regional offices were not fully staffed. In one region, the sanitation engineer was on temporary duty from Lima. In another region, the sanitation technician was on loan from the local hospital. All of the regional offices lacked other support personnel. Therefore, we still do not believe the expanded project was ready for "immediate implementation" as stated in the proposal to authorize the additional funds. In addition, we believe that considering the (1) inordinate delays in meeting the conditions precedent to disbursement; (2) WASH assistance needed to complete actions required to permit disbursement, review water system designs, and develop procurement plans; and (3) slow progress--AID should have been alerted that there were basic weaknesses in the technical and institutional capacity of the implementing agency.

Plans to redirect the project need action

The mission did not agree with our conclusions in the report draft regarding the overly optimistic design of the project, or our doubts concerning Peru's commitment and capacity to implement the project. They restated their optimism about recent policy changes and plans for raising salaries, using paraprofessionals, and accelerating the installation of water supply systems. They noted that the health education, operation and maintenance, technical assistance, and training activities will be underway by the end of 1983.

Our conclusions were based on the status of the project at the time of our review--almost 2-1/2 years after it was authorized. We agree that since our fieldwork, progress has been achieved to redirect the project. We also believe, however, that there is a need to implement the plans and policies, and move the project forward. Meeting the goals the mission has established for 1983, would demonstrate that the project merits continued U.S. support.

Originally, we proposed that a reexamination of the project be undertaken--including an assessment of the number and type of water supply systems, sanitation facilities; and operation and maintenance, technical assistance, special studies, health education, and primary health care activities Peru can execute and sustain. The mission responded that our concerns have been met. We do not believe that statements of policy and the reformulation of plans and schedules constitute a reexamination of the project design. We do believe the mission should be given the opportunity to implement these changes. Therefore, we are qualifying the recommendation to reexamine the project.

The draft report also proposed issues be resolved concerning the (1) ability of Peru to implement the project, (2) wider use of public taps, (3) per capita costs, and (4) procurement problems. Regarding the first issue, we believe the meetings between AID and Peru officials is a positive first step. The policies and plans must now be implemented. By the end of this year, the mission plans to initiate a study of how communities can finance the cost of household connections. Our concern about the wider use of public taps related primarily to the objective of improving the health of the target populations, and secondarily to the alternative costs of household connections and public taps. Hopefully, the study will also address the primary issue. Concerning the issue of per capita costs, we believe there is sufficient uncertainty to warrant further and continuing analysis. A mission official stated that this would be an ongoing process. This is particularly important since the mission maintains the aim of installing all 660 systems. Initial actions have been taken to resolve the procurement problems.

The draft report recommended that the \$5.0 million grant and the \$0.5 million loan authorized by the amendment be deobligated. The mission strongly disagreed with this recommendation. They are convinced of Peru's commitment to carry out the program, and place a high value on integrating water supply and preventive health measures throughout a wide geographic area. They are convinced of the implementing agency's capacity to utilize the additional funds.

Based on the progress since our fieldwork, and the mission's statements that the forward momentum would be maintained, we are qualifying the recommendation to partially deobligate the project pending a reassessment of progress. We believe that

the mission should be given until the end of 1983 to demonstrate Peru's commitment to meeting the serious need for water supply, sanitation, and primary health care services in small rural communities.

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UNITED STATES GOVERNMENT

Memorandum

TO : Mr. Thomas R. Brogran
LAC/DR, Dwight Johnson, Director

DATE: April 15, 1983

FROM : USAID/Peru, John Sanbrailo, Director

SUBJECT: Mission response to draft GAO Report on the Rural Water Systems and Environmental Sanitation Project in Peru (527-0221)

Introduction

Conceptually, AID projects are designed with a series of outputs to be achieved over the life of the Project. Achievement of these outputs is the necessary condition for the attainment of the project purpose and the verifiable conditions which exist at the end of the project (EOPS) which indicate that the project purpose has been attained. Development projects are collaborative efforts with LDC governments whose agencies have varying levels of institutional capacity. The implementation process is not clean; there are many difficulties along the way to accomplishing the EOPS and even set backs. Thus, it is to be expected that initially the decentralization process will be slow and difficult, working with a government structure based on centralized control; that proper water and latrine usage habits will not be immediately adopted by backward rural communities after the first dose of community education; that the procurement process will be difficult at the beginning; and that staffing problems will continue to occur. It is also to be expected that by the end of the project these problems will be resolved--but that at early stages many serious problems may exist in any or all of these areas.

Interim project evaluations are extremely useful to point out problems and suggest corrective action which ought to be taken. In this regard the GAO report coincided with an internal Mission review of all the health programs in its portfolio. Essentially, the report corroborated the findings which the Mission had made, confirming the need for corrective actions, many of which the Mission was taking or planning to take. Interim reports should focus on implementation problems, as long as the project design is viewed as sound, and avoid relating these problems to decisions regarding deobligation. Deobligation calls into question the basic design of a project or commitment on the part of the host government, neither of which are problems affecting this project.

Comments

We have the following observations and comments on the specific issues and conclusions and recommendations raised in the draft GAO report of April 1983.



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1. As was stated in our quarterly report dated April 7, 1983, implementation delays under the first project during 1981-1982 centered around the development of an acceptable life of project implementation plan and a detailed first year operational plan for DISAR. This was an initial CP under the loan and required more than eight months for DISAR to meet. Delays in meeting CPs are common to AID projects; however, in this case, they were exacerbated by reorganizations within the Ministry of Health, the lack of technical assistance to help DISAR meet CPs, as well as the fact that extensive field visits to the six project regions were required before the plans could be developed. In addition, vehicles ordered in early 1982 are only now arriving (May-June, 1983).

2. a. The GAO stated that some of the assumptions which supported the design of the project are no longer true (p.4.). We agree with the first example cited by the GAO, i.e. that the GOP has not been able to provide the personnel to achieve fully the institution-building objectives under the project. This was because of the problem of salary ceilings which the Ministry of Health (MOH) could pay its direct hire and contract personnel and the GOP's newly installed austerity program.

During the week of April 11, 1983, following a meeting with President Belaunde on April 8 to discuss this project, the MOH/DISAR launched a salary study with a view to recommending a higher salary scale for sanitary engineers which would be competitive with the private sector and other parastatal organizations. As a result of a recent meeting with the Ministry of Health, we are anticipating major salary increases for sanitary engineers within the next two months which will allow DISAR to hire the seven additional sanitary engineers needed to staff the 16 regional health offices. These sanitary engineers would supervise water system design activities of the sanitary technicians (paraprofessionals) already assigned to the regions. Central offices in DISAR would no longer have to review and approve designs in Lima as envisioned in the PP. Using WASH assistance, these sanitary technicians will receive short-term training in designing simple gravity-fed systems. These training courses are scheduled to start summer 1983. By the end of CY 1983 DISAR should have an installed capacity at the regional level to design water systems, a major objective of the project.

b. The GAO stated that AID and DISAR disagree over the use of paraprofessionals. While this was true at the time of the GAO visit, it was an issue of concern to the Mission and a subject of discussion with DISAR prior to the GAO visit. It is no longer the case. Numerous additional discussions have been held at the working, ministerial and presidential levels concerning this problem of defecting sanitary engineers. The Mission and MOH/DISAR at the ministerial level, as well as at the working level, are now in complete agreement with the policy to use paraprofessional engineers in regional offices to design water systems.

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c. As was stated in our quarterly report, DISAR has asked for the services of a long-term sanitary engineer. Mr. Salvador Reyes of the Indian Health Services arrived Monday April 18 for a two week TDY to be considered for the job. The GAO report stated that there was disagreement over the source of technical assistance. The Mission expects Mr. Reyes to be fully acceptable to DISAR. However, if not, two other candidates are available for interviews.

d. The GAO report raised questions about Peru's commitment to the goal and purposes of the project. Given our policy discussions during the past four months, including those with President Belaunde, we are confident that the MOH/DISAR continues to be fully committed to the institution-building objectives of the project and is currently making every effort to accelerate its implementation. These objectives have never been in doubt as the basic outline of the program was negotiated some three years ago with DISAR. Rather, operational issues, which affected the implementation of the project, have been the cause of the problems which delayed project execution. For CY 1983 \$1.0 million in loan funds and \$600,000 in GOP counterpart funds have been budgeted. The Mission is projecting more than \$1.0 million in loan funds to be disbursed this year because of the large procurement of PVC pipe and vehicles. It is estimated that 90 systems will be constructed during CY 1983 and \$465,000 of PVC pipe will soon be purchased locally. In addition all vehicles and equipment will also be ordered this CY. Of the 90 systems to be constructed, 42 have already been designed.

3. We agree with the GAO report that many project components had not been implemented at the time of their report: health education, operations and maintenance assistance, health baseline study, etc. With the advent of our long and short-term technical advisors, these components, as well as local and off-shore procurement of PVC pipe and other construction materials and vehicles, will be initiated. A TDY sanitary engineer is currently in Lima assisting our staff to prepare IFBs for PVC pipe.

4. The GAO report stated that per capita costs exceed \$70. The Mission and DISAR have just completed a cost analysis on the first 10 systems constructed in Huaraz and found that per capita costs averaged \$50, which is the exact per capita cost projected in the Project Paper. In addition, our TDY sanitary engineer informs us that a per capita cost of \$70 is still very reasonable for rural water systems. His experience elsewhere in building dispersed systems in the rural areas demonstrated a range in per capita costs from \$27 - \$150 with an average cost of \$90. Utilizing this \$50 per capita cost figure and drawing down on the \$1.7 million in contingencies under the Project and the Amendment, it is highly likely that the full complement of 660 systems can still be built by the PACD of September 30, 1987. The Mission does not plan at this date to reduce that output target because of the enormous deficit in Peru in water systems in villages of 500 inhabitants or less. DISAR has a backlog of 1,000 requests for water systems and there are more than

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65,000 villages of 500 inhabitants or less in Peru; 99% of them do not have access to safe water. Using the target of 660 systems, DISAR will have to build an average of 15 water systems per year per health region (660 systems, 10 regions, 4.5 years.) This does not appear to be beyond DISAR's capability.

5. Training activities will be initiated during the summer of 1983 with the arrival of WASH technicians to help train paraprofessional sanitary technicians in the design of gravity-fed water systems. Health education training activities will also be initiated this summer with short-term technical assistance in Ancash department, utilizing the primary health care team in that region (nurse-midwives, nurse auxiliaries, promoters, and parteras) in those communities which have already received water and latrine systems. Operations and maintenance activities, including training of the Juntas Administrativas, will also be included in the training programs. At this time the issue of whether user fees are adequate to cover operations and maintenance costs will be evaluated. Because only 30 systems have been constructed to date, it has not been possible to assess the degree of effectiveness of this component of the loan.

6. The GAO report describes a series of eight special studies which have not yet been undertaken. However, a special study on water and latrine usage in the Ica region was submitted to AID in October, 1982. The report included development of two questionnaires: one on household water usage and knowledge; and the other on the actual operation of water systems. These questionnaires will be used in the design and subsequent evaluations of the health education component of the project. The latrine study will be designed and implemented beginning in June in coordination with the German Technical Assistance program in Cuzco Health Region and will include testing of alternative latrine designs. The health baseline survey, which is being funded under project 527-0219, is scheduled for implementation in late 1983. Follow-up studies to determine health effects of various project components as described in the project paper will also be funded under the project. Three other engineering studies proposed by DISAR are presently being evaluated by two TDY engineering consultants. The study designs will be modified and at least one will be initiated in August 1983. It is expected that alternative water system designs (besides gravity-fed spring systems) will be tested as alternative opportunities arise. These alternatives will be identified by the long-term technical assistance engineer who is tentatively scheduled to arrive in June 1983. Other research studies recommended by WASH consultants will be reviewed by the long-term engineer and these or other studies will be carried out in CY 1984.

7. The GAO report stated that implementation delays of our primary health projects (527-0219, 527-0230, 527-0224) have precluded their integration with the rural water sanitation project. Despite implementation delays in several project activities, the training of village level promoters and midwives has been underway for several

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years. These village level workers provide the linkage between the primary health care and rural water projects. In fact, in one of the project sites visited by the GAO team - Hualcan of Ancash Region, the chairman of the potable water committee was a promoter who had been trained under the MOH Project. By developing a more formal health education program with active involvement of these village-based health care providers and their supervisors integration of these programs will continue. Improvements in primary health care project activities, such as the successful implementation of the revolving fund for medicines programs, will strengthen this integration. USAID and the MOH will conduct an evaluation of the promoter program, and based on this study and the evaluation of the midwife program, will recommend mechanisms to increase the public health tasks of these workers and to strengthen the supervision of the MOH health team.

8. The GAO Report implied that Mission made a precipitous expansion of the project to four additional regions in the face of serious implementation problems under the original project. As was explained in the April quarterly report, by 1982 it had become evident that in order to achieve maximum impact on health status, the rural water and sanitation activities had to be expanded to include four additional regions where our health services activities under AID projects 527-0219 and 527-0230 were operating. DISAR also had more than 1000 requests on file from rural sierra communities for water systems which they were unable to address. At the same time, the GOP had recently created departmental level development corporations, and DISAR wanted to take advantage of these in order to decentralize design and construction activities and provide follow-on operations and maintenance assistance. Furthermore, in conjunction with the new Belaunde Administration's policy to involve the private sector in Peru's development, DISAR wanted to utilize the private sector in the rural areas in the design of water systems and in the training of paraprofessional water engineers. With these additional resources and its own staff, DISAR clearly possessed the technical and institutional ability to implement the ongoing project. In fact, DISAR itself had a staff composed of 44 engineers, of which 20 were based in the regions. Under the first project, which operated in six regions, DISAR had hired additional staff in fulfillment of the initial Conditions Precedent for the first three regions. This staff was in place and working full time.

Based on these conditions, in September 1982 an amendment to this project was signed which added funding for construction of 240 additional water systems and latrines, warehouse and office construction, health education and technical assistance, and training activities in four additional health regions. The addition of \$5.5 million to expand the geographic coverage of the project does not place significant additional work requirements on offices which were included in the original project, and the Mission therefore believes that DISAR can implement the expanded project as well as they can implement the original loan. DISAR has provided USAID a Plan for Implementation for the additional regions as required, and the LOP plan for the implementation

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of all project activities, including the utilization of regional development corporations and the private sector for design and construction activities, will be delivered within the next 30 days.

The GAO report also stated that many problems, "were either apparent or developing prior to the extension." This is only true with the benefit of hindsight. The departure of sanitary engineers actually started subsequent to the amendment period. Only two had left DISAR by June 1982. This was not considered to be a major problem at the time, since there is always some turnover in personnel in any institution. The problem of low level and declining public sector salaries is one which is affecting all levels of the Peruvian government as a result of the rapidly deteriorating economic conditions in Peru, which has accelerated over the last year. The sound, but difficult, remedies which the GOP is applying to improve the economic future of the country exacerbate this problem. The GOP is already attempting, however, to resolve the public sector salary problem in a coordinated and rational way, and the Mission believes that it is doing so. This project has been particularly affected by the problem, but we believe that the measures proposed by the MOH should resolve the problem.

The construction schedule was at least one year behind because of the delay in meeting CPs. However, if the first full year of the project is considered to be 1982 instead of 1981 - the original construction target of 30 systems projected for the first year was almost met, and the second year target of 90 systems will be met by the end of CY 1983. The first three regions were adequately staffed, otherwise initial CP's could not have been approved. Construction in the first three regions (Ancash, Cajamarca, and Junin) was integrated with AID-financed primary health activities in that the AID project areas were receiving funds under the primary health care projects since CY 1981 and AID, at the time of the Amendment, was in the process of approving 1982/1983 Operational Plans which included two of those three regions. The third region (Junin) was never included in our primary health care activities. Therefore, to the extent possible integration was taking place at least on a geographic level. Of course, further integration will be possible as the implementation pace accelerates.

9. GAO Conclusions

During the last four months the Mission has carefully reviewed the original project design and has reaffirmed its technical, institutional, economic, and social feasibility and plans to proceed with its implementation on an accelerated basis. The policy environment in which we are working with respect to delivering the most cost effective water systems to dispersed rural communities is optimal in our opinion. We believe that we have obtained from the GOP sufficient commitment to raise professional salaries and utilize paraprofessional engineers in the design and construction of water systems at the regional level, so that the construction targets listed in the Project Paper Amendment can be realized and the institution-building purpose of the project achieved.

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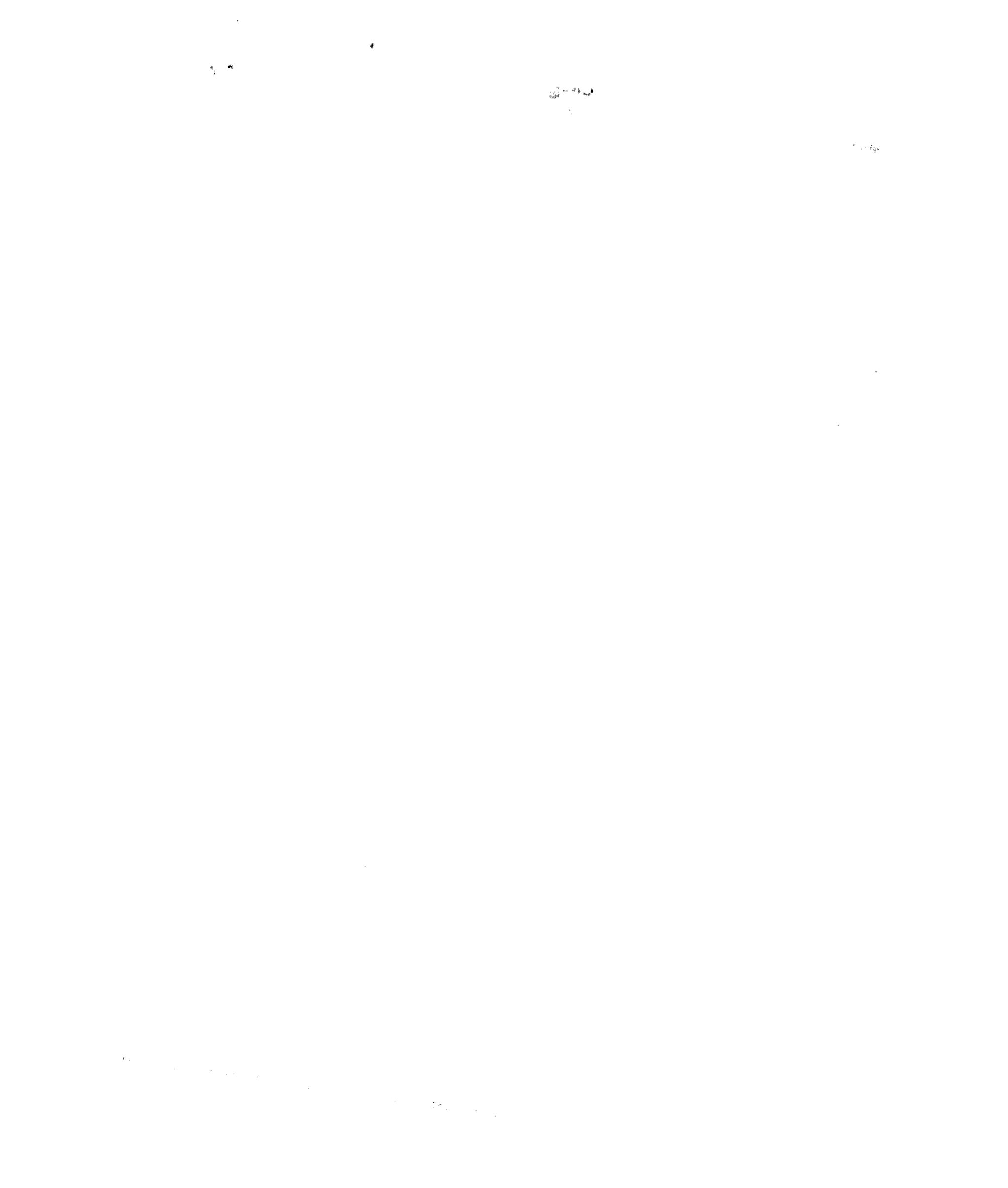
Per capita costs of our systems constructed to date are not excessive, especially when compared to the experiences in other Latin American countries (Ecuador, Panama). Off-shore and local procurement is now in process and will be completed shortly. Decentralization is a DISAR and MOH priority. We are working daily with DISAR to decentralize the design approval process so that regional sanitary engineers can approve water systems designs on site. DISAR is reconsidering the idea of using Lima-based private sector firms to design water systems in 1983. We are working to initiate the other project components which have not yet begun so that by the end of CY 1983 health education, operations and maintenance, technical assistance, and training activities, will all be underway.

10. GAO Recommendations

a. We believe that the Mission has already fulfilled this recommendation.

b. We have resolved GAO issues number one, three and four. Concerning issue number two we are examining ways to increase community contribution for financing costs from the main waterline to the household. This issue will be studied under the special studies component of the project which will be initiated by the end of FY 1983.

c. We strongly disagree with the GAO's draft recommendation to deobligate \$5.5 million under the project. We are assured by our policy discussions at all levels of the GOP/MOH that there is a very strong GOP commitment to carry out this program as originally planned. Conceptually, we would have financed at least a \$10 million water component to our \$30 million health services delivery program in a single fiscal year if AID resources had been available. The synergistic effects of safe water availability and preventive health services have already been established in practice and in the literature. In order to obtain maximum health impact and the incremental benefits from adding a water component to our health services program (rationale for financing rural water and sanitation projects from the health account), it is imperative to finance the additional four regions. Since we have already obtained the policy objectives criticized by the GAO, it serves no useful purpose for future relations with our counterparts in the MOH to deobligate \$5.5 million. With the change in using paraprofessionals (sanitary technicians) in design activities, and with the retention of sanitary engineers at the regional level due to an improved salary scale, the absorptive capacity of DISAR to utilize the additional funding is assured.



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