

**Audit of USAID/Nicaragua's Water and
Sanitation Activities**

Audit Report No. 1-524-01-008-P

July 25, 2001

Regional Inspector General / San Salvador



U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

RIG/San Salvador

July 25, 2001

MEMORANDUM

FOR: USAID/Nicaragua Director, Marilyn A. Zak

FROM: Regional Inspector General, Timothy E. Cox

SUBJECT: Audit of USAID/Nicaragua's Water and Sanitation Activities
(Report No. 1-524-01-008-P)

This memorandum transmits our final report on the subject audit. In finalizing the report, we considered your comments on the draft report, which are included in Appendix II.

The report contains one recommendation. Final action has been taken on the recommendation and therefore no further action by USAID/Nicaragua is needed.

I appreciate the cooperation extended to my staff during the audit.

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Summary of Results

The Regional Inspector General/San Salvador performed this audit as part of its fiscal year 2001 audit plan. The audit's two objectives were to determine whether or not USAID/Nicaragua's water and sanitation activities were on schedule to achieve their planned outputs and whether the mission had implemented an adequate system to monitor these activities. (See page 4.)

Regarding the first audit objective, except for an activity to construct seepage pits and an activity to construct a solid waste facility, USAID/Nicaragua's water and sanitation activities were on schedule to achieve the planned outputs. As of February 23, 2001, none of the seepage pits had been constructed. We recommend that the mission develop a plan for constructing the seepage pits or reprogram the \$136,000 in funds budgeted for their construction. We did not develop an audit finding or recommendations concerning the solid waste facility because only one such facility is to be developed and we believe that it can reasonably be completed before the end of the program. (See page 4.)

Regarding the second audit objective, the audit found that the mission had implemented an adequate system to monitor its water and sanitation activities. (See page 6.)

USAID/Nicaragua agreed with the report findings and has taken final action on the report recommendation. (See page 6.)

Background

According to USAID/Nicaragua, Hurricane Mitch was the worst natural disaster in two centuries to hit Central America. The storm poured out record levels of rain causing widespread flooding and landslides. The areas affected most by Hurricane Mitch, located in the north and northwest parts of Nicaragua, are the poorest regions of the country. The Atlantic region, with its large indigenous population, suffered flood damage along the Rio Coco and its tributaries. Also, a large part of the population had no potable water and storm sewers were not able to handle the volume of runoff.

On September 30, 1999, USAID/Nicaragua provided \$9.5 million to Camp Dresser & McKee International for the rehabilitation and/or building of new community water systems and restoration of health and sanitary conditions to their pre-Hurricane Mitch levels. The purpose of the program is to increase sustainable water supply and sanitation services for up to 200,000 people in hurricane-affected areas of the country. This goal is to be met through construction and rehabilitation of water supply systems and latrines, in addition to training of community members in basic water and sanitation techniques. Camp Dresser & McKee International has overall responsibility for achieving the planned outputs and has awarded \$5.1 million to six other organizations to assist in this effort.

Audit Objectives

As part of its fiscal year 2001 audit plan, the Regional Inspector General/San Salvador performed an audit to answer the following questions:

- Are USAID/Nicaragua's water and sanitation activities on schedule to achieve the planned outputs?
- Has USAID/Nicaragua implemented an adequate monitoring system for its water and sanitation activities?

The audit scope and methodology is presented in Appendix I

Audit Findings

Are USAID/Nicaragua's water and sanitation activities on schedule to achieve the planned outputs?

Except for the construction of seepage pits and construction of a solid waste facility, USAID/Nicaragua's water and sanitation activities were on schedule to achieve the planned outputs. The following table shows the planned outputs reflected in Camp Dresser & McKee's workplan and actual outputs as of December 31, 2000:

Project Type	Planned through 12/31/00	Actual through 12/31/00	Percent of completion	On schedule?
I. Drinking Water Systems				
a. Piped Water Systems	15	13	87%	Yes
b. Wells	1,064	1,021	96%	Yes
II. Sanitation				
a. Latrines	3,014	3,829	127%	Yes
III. Environmental				
a. Seepage Pits	1,218	0	0%	No
b. Solid Waste	1	0	0%	No ¹
c. Nurseries/Reforestation	12	23	192%	Yes

Construction of seepage pits has been significantly delayed. This matter is discussed in the following section.

¹ Although this activity was not on schedule, we did not develop an audit finding and recommendations for accelerating progress because only one such facility is to be developed and we believe that it can reasonably be accomplished before the end of the program.

Mission Should Arrange to Construct Seepage Pits or Reprogram Funds

As of February 23, 2001, Save the Children had not been able to construct any of the 1,218 seepage pits planned to be constructed by December 31, 2000. Seepage pits are small in-ground water filters that are to catch “gray water”² and dissipate it into the ground. Due to the high water table in the area in which Save the Children works, the original design for the seepage pits proved to be unworkable and the Nicaraguan Water and Sewer Authority’s (ENACAL) approval could not be obtained because the seepage pits could contaminate the ground water.

These are not complex structures. Seepage pits are in-ground structures filled with gravel and sand, and are one square meter wide and one meter deep. They have concrete walls and open bottoms. They were to be constructed in the same locations where wells were provided. The country director for Camp Dresser & McKee International stated that Save the Children is the only organization using seepage pits. Other organizations use training in the proper disposal of wastewater in lieu of seepage pits.

The country director stated that he believed the 2,567 seepage pits could still be completed before the scheduled end of the project (August 31, 2001). But, as stated above, ENACAL’s construction approval was not granted because the use of the original design could contaminate the ground water. The country director also did not believe that the seepage pits were a critical element of the project and that funding in this area could be substituted for alternative uses. Mission officials supported the construction of the seepage pits if a workable design could be found.

In response to the USAID activity manager’s inquiry into schedule slippages in this area, Camp Dresser & McKee International stated that 400 of the seepage pits would be built by the end of March. As of February 23, 2001, none had been constructed.

If the seepage pits are not constructed, about \$136,000 can be reprogrammed for other uses.

Recommendation No 1: We recommend that USAID/Nicaragua find a feasible design for the seepage pits and prepare a plan for their construction or reprogram the \$136,000 in budgeted funds for the seepage pits for other program uses.

Has USAID/Nicaragua implemented an adequate monitoring system for its water and sanitation activities?

USAID/Nicaragua implemented an adequate monitoring system for its water and sanitation activities.

² Gray water is wastewater resulting from dishwashing, showers, and similar activities, as opposed to “black water” which contains sewage.

Section 202.3.4 of the Automated Directives System states that a major task of mission staff generally includes monitoring the quality and timeliness of outputs produced by implementing organizations. Early action in responding to problems is critical to the process of managing for results. USAID/Nicaragua used several techniques to monitor the quality and timeliness of outputs:

- The mission obtained annual workplans from its contractor and provided written comments on them.
- Mission staff approved water and sanitation sites in advance, aiming to minimize overlap between implementing entities.
- The mission hired a reconstruction coordinator and a water and sanitation activity manager to help provide oversight for its water and sanitation activities. These individuals make site visits to monitor progress towards completion of planned activities.
- The mission obtained quarterly progress reports from its contractor.
- Mission staff worked with the Office of Inspector General to arrange for annual financial statement audits of the contract with Camp Dresser & McKee International.

Based on our review of these techniques, and also based on the fact that most of the water and sanitation activities were on schedule at the time of our audit, we concluded that these monitoring techniques, together, provided substantial assurance that planned outputs would be achieved on time.

**Management
Comments and
Our Evaluation**

USAID/Nicaragua agreed with the audit findings and the report recommendation. The mission has reprogrammed \$136,051 originally budgeted for seepage pits and accordingly final action has been taken in recommendation No. 1.

**Scope and
Methodology****Scope**

We audited USAID/Nicaragua's water and sanitation activities in accordance with generally accepted government auditing standards.

The audit covered water and sanitation activities funded with \$9.5 million from the supplemental appropriation for the Central America and the Caribbean Emergency Disaster Recovery Fund.

The fieldwork was conducted at USAID/Nicaragua from January 31, 2001 through February 23, 2001. We interviewed officials and reviewed relevant program documentation at Camp Dresser & McKee International and its six implementing partners: Action Against Hunger, Adventist Development and Relief Agency, Alistar, Plan International, the Red Cross, and Save the Children.

Our assessment of management controls included assessments of risk exposure and control effectiveness. The assessment covered the following USAID/Nicaragua management controls: (1) obtaining annual work plans from Camp Dresser & McKee International, (2) approving sites where water and sanitation activities were carried out, (3) performing site visits to obtain first-hand information on the status of activities, (4) obtaining quarterly progress reports from Camp Dresser & McKee International, and (5) working with the Office of Inspector General to arrange for annual financial statement audits of the contract with Camp Dresser & McKee International.

Our audit included site visits to the Nicaraguan departments of Madriz, Nuevo Segovia and Chinendega. These visits covered a judgmental sample of 15 of the 118 community operating areas where the implementing partners were carrying out activities. To select the sites to be visited, we used a judgmental sampling methodology that considered the results of our assessment of management controls and the logistical issues involved in reaching the community operating areas.

Methodology

To answer the audit objectives, we interviewed responsible officials at USAID/Nicaragua and the six implementing entities. In addition, we reviewed relevant documentation obtained from all six entities and USAID.

To determine whether water and sanitation activities were on schedule to achieve planned outputs, we reviewed documentation at USAID/Nicaragua that included project design documents and the strategic objective grant agreement and its annexes. We also reviewed the agreements for each of the six implementing partners that described planned activities, funding, expected outputs, and

timeframes. In addition, we reviewed work plans, quarterly progress reports, and records of site visits to the reconstruction areas.

Further, we performed site visits to project sites to determine the extent of progress made to date on the water and sanitation activities. For the purposes of our work, we considered activities to be on schedule if they achieved at least 75 percent of the planned outputs as of December 31, 2000. In establishing this threshold, we made judgments about the level of performance that was practical and attainable for the activities audited.

To determine whether USAID/Nicaragua had implemented an adequate monitoring system for its water and sanitation activities, we interviewed USAID/Nicaragua officials to determine what monitoring mechanisms are in place and obtained documentation to verify that these mechanisms were actually implemented and operating as intended.

**Management
Comments**

JUN 21 2001

Steven H. Bernstein
Acting Regional Inspector General /San Salvador
USAID/Office of the Regional Inspector General
San Salvador, El Salvador

Dear Mr. Bernstein:

SUBJECT: Audit of USAID/Nicaragua's Water and Sanitation Activities
Report No.1-524-01-0XX-P

Thank you for the opportunity to comment on the draft audit report, which contains one recommendation. Please see the attached for the Mission's comments.

I appreciate the excellent working relationship that your auditors have with Mission management and personnel.

Sincerely,

Marilyn Zak
Director

Attch.

USAID/Nicaragua Response to Audit of Water Sanitation Activities

The Mission agrees with the audit findings and has taken positive steps to respond to the auditors' concerns. We resolved the issue of the seepage pits by using a different pit design together with training for household members on how to dispose of wastewater through natural evaporation. In addition, Save the Children (STC) and USAID have taken action to reprogram the funds.

Recommendation No.1: We recommend that USAID/Nicaragua find a feasible design for the seepage pits and prepare a plan for their construction; or reprogram the \$116,000 remaining budgeted funds for the seepage pits for other program uses.

The propensity for heavy rains together with high water-table soil conditions required us to modify Save the Children's wastewater disposal methodology. Small in-ground seepage pits were not technically feasible due to these conditions, especially in the Pacific lowlands. Consequently, STC is using instead an integrated approach to wastewater disposal that focuses on community and household training and provides a reduced number of wastewater collection pits. In place of 2,567 seepage pits, Save the Children will now construct 800 collection pits and train household members how to disperse the wastewater on exposed ground surfaces and over plants for natural evaporation. This approach is feasible and USAID/Nicaragua believes it will contribute to reducing the amount of standing water and puddles near beneficiary houses.

All remaining funds have been reprogrammed to construct 260 composting latrines and approximately 185 elevated pit latrines. The combination of composting latrines, additional elevated latrines, a reduced number of wastewater collection pits and community/household training on wastewater disposal will adequately address the environmental component as originally contemplated in the special objectives and expected results of the USAID/Nicaragua Hurricane Mitch water and sanitation program.

The following table reflects changes relative to the budget and implementation plans:

Original budget for 2,567 seepage pits @ \$53 each	\$136,051
Budget for 800 disposal pits @ \$12 each	\$ 9,600
Budget reprogrammed to construct 260 compost latrines @ \$313 each	\$81,380
Budget reprogrammed for monitoring, training and follow-up related to latrines.	\$35,577
Budget reprogrammed to construct additional elevated latrines	\$9,494
Total reprogrammed	\$136,051

Construction of the 800 wastewater disposal pits began in March and is on schedule to be completed by the end of July 2001. Construction of the compost and elevated latrines is also scheduled to be complete by the end of July. Follow-on training and health education for all infrastructure will continue through the end of the program.

The background section of the audit report accurately reflects USAID/Nicaragua's written plans for Water and Sanitation Activities and the terms and conditions of our signed contracts as of February 23,2001- the date that the RIG completed its activities in Nicaragua for this audit. Subsequent to this date, our principal contractor has been awarded additional funds and their project completion date has been extended from August 31,2001 to December 31,2001.

We believe that the Mission has complied fully with the intent of the recommendation and so ask that you please consider the audit recommendation resolved and closed.