

**WATER AND SANITATION
FOR HEALTH PROJECT**



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DOMINICAN REPUBLIC

CONSULTATIONS ON HEALTH

SECTOR LOAN II

Report of a Field Trip

26-30 January 1980

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tional Development in
Health, Boston University,
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Technology Institute, Re-
search Triangle Institute,
University of North Carolina,
at Chapel Hill.

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February 10, 1981

Dr. Oscar Rivera, M.D.
Health Officer
United States Agency for International
Development
Santo Domingo, Dominican Republic

Dear Dr. Rivera:

On behalf of the WASH Project, I am pleased to send you ten copies of the report of my visit to the Dominican Republic on 26-30 January 1981 to discuss WASH assistance to Health Sector Loan II.

This visit was requested by the Mission on 10 November 1980 in cable 8756. The WASH Project was authorized to undertake the work by AID/Washington, DS/HEA, in Order of Technical Direction No. 21, dated 26 January 1981.

We look forward to your comments on this report and will be happy to discuss any questions you may have on any of the findings or recommendations contained in it.

Sincerely,

Dennis Warner

Dennis B. Warner, Ph.D., P.E.
Associate Project Director

DBW:eaf

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TABLE OF CONTENTS

	<u>Page</u>
Acknowledgements	ii
I. Purpose of Visit	1
II. Itinerary	2
III. Issues and Findings	3
1. Health Sector Loans I and II	3
2. Field Visits	3
3. Program Evaluations	4
4. Plastic Water Containers	9
5. Ceramic Water Seal Latrines	10
6. Health Education Materials	11
IV. Recommendations	13
1. Program Evaluation	13
2. Plastic Water Containers	14
3. Ceramic Water Seal Latrines	15
4. Health Education Materials	15
Attachments	
1. AID Mission Cables	17
2. Documents on Water Seal Latrines Given to the Mission	19
3. Colombian Ceramic Pour Flush Pedestal Unit	20
4. Addresses of Plastics and Ceramics Manufacturers in Santo Domingo	21

ACKNOWLEDGEMENTS

The writer wishes to acknowledge the official assistance and personal hospitality provided by Dr. Oscar Rivera, M.D., Health Officer, USAID Mission in the Dominican Republic, who was extremely helpful in the overall preparation of this report. Appreciation is also expressed for the assistance given during the field visits by Mr. John Henry Thomas, Public Health Advisor, and Eng. Elpidio Antonio Caba, Engineer Supervisor, both of the USAID Mission.

I. PURPOSE OF VISIT

The WASH office was initially contacted by the USAID Office of Health (DS/HEA) on January 1981 with regard to water seal latrines and water storage containers for Health Sector Loan II. As a result of a telephone call to the Mission on 22 January 1981, it was decided to send a WASH representative to the USAID Mission in Santo Domingo to discuss the following areas of assistance:

- (1) Assistance in designing and carrying out evaluation plans for Health Sector Loan II.
- (2) Assistance in providing information on water seal latrines.
- (3) Assistance in preparing specifications for household water containers and water treatment.
- (4) Assistance in designing health education materials for potable water and sewage disposal activities.

II. ITINERARY

- 26 Jan Left Washington, DC at 9:55 a.m. Changed planes in Miami and arrived in Santo Domingo at 4:30 p.m. Was met at the airport by the USAID Mission driver and taken to Cervantes Hotel where a reservation for the period 26-30 January was waiting.
- 27 Jan Left name and hotel address with the U.S. Embassy Marine guard. Went to the USAID Mission and met with Dr. Oscar Rivera, M.D. (Health Officer) and Mr. John Henry Thomas (Public Health Advisor). We discussed Health Sector Loans I and II and the assistance the WASH project could provide. In the afternoon, Mr. Thomas, Ing. Elpidio Antonio Caba (Engineer Supervisor), and I visited a plastics manufacturing firm to inquire about the fabrication of water containers.
- 28 Jan With Mr. Thomas and Ing. Caba, visited the project villages of Palmarejo, Los Tramojos, and Las Yayitas, which are near the provincial capital of Azua, 120 km west of Santo Domingo. All three communities have been provided with drilled wells and hand pumps under Health Sector Loan II. We also visited the offices of the Secretariat of State of Public Health and Social Assistance (SESPAS) in Santo Domingo and met with Mr. Ramon De Freitas (Director of the water and sanitation program, UAPODAN), Mr. Joaquin Abad Peguero (Assistant Director, UAPODAN), and Mr. Enrique Perez (Engineer Supervisor, UAPODAN). We discussed the manufacture of plastic water containers and the role of SESPAS in latrine construction. Late in the afternoon, we called upon another plastics firm and a ceramics firm.
- 29 Jan. Eng. Caba and I spent the day visiting plastics and ceramics manufacturing firms. Late in the afternoon, Dr. Rivera, Mr. Thomas, and I discussed the recommendations this report would make. In the evening, I began writing the report.
- 30 Jan Completed a draft on this report. Reviewed its contents with Dr. Rivera and Mr. Thomas. Left a copy of the report in handwritten form with Dr. Rivera. Departed Santo Domingo by air at 2:30 p.m. Changed planes in New York and arrived in Harrisburg, PA at 10:55 p.m.

III. ISSUES AND FINDINGS

1. Health Sector Loans I and II

There are two major health programs sponsored by USAID in the Dominican Republic. Health Sector Loan I, comprising \$4,700,000 of USAID funds, was undertaken in the mid-1970's to promote basic health services and low-cost health care delivery in the poorest rural areas. Health Sector Loan II, totalling \$8,000,000 of USAID funds, was authorized in November 1978 and began field operations in mid-1980. Its components include the expansion of the low cost health delivery system of Loan I, the upgrading of rural clinics, and the provision of potable water supplies, sanitary latrines, and health education. By 31 December 1980, Loan I was 85% disbursed and Loan II was 14% disbursed. A total of 175 wells had been drilled in 36 communities under Loan II by that date.

Because of personnel problems in the Loan I program, the Loan II program has recently been modified to stress the practical health education role of intermediate level supervisors. Whereas, Nurse Auxiliaries originally were intended to oversee village-level Promotores, a more practical cadre of Promoter Supervisors is now used in communities participating in the water supply and latrines component of the program. Health education materials are needed for these Promoter Supervisors and for the personnel immediately above and below them.

Assistance is also required in developing several types of evaluations. As described by the Project Paper (AID/BAS-033, July 1978), the first is a periodic evaluation of immediate implementation targets. The second involves a time-series sample survey to assess the overall goal of reducing the mortality rate of infants and children. The third evaluation involves a series of controlled interventions to test two hypotheses regarding child mortality and diarrhea.

And finally, assistance is needed in developing household water containers and appropriate latrine designs. The water supply component of the program has begun, and many communities are in need of containers. The latrine component has not yet begun, and an early decision is needed for the design to be adopted.

2 Field Visits

On 28 January, field visits were made to the project villages of Palmarejo, Los Tramajos, and Las Yayitas near the provincial capital of Azua, 120 km west of Santo Domingo. All three communities have drilled wells and hand pumps provided by Health Sector Loan II.

Palmarejo had eleven wells with hand pumps. Those which were inspected were well constructed with proper drainage and well greased pump parts. One of the pumps was reportedly not used because of a high silt content in the water. Although the Loan II program had not yet begun the sanitation component, SESPAS had stockpiled concrete latrine slabs and cast concrete riser seats for pit latrines in the village. The local Promotore reported that some people were refusing to pay their \$0.50 monthly contribution until they received both water and latrines.

In Los Tramojos, the contractor changed the design of the hand pump base with the result that poor drainage and large muddy areas have developed around the pumps. Most houses in Los Tramojos had new latrines which were provided by SESPAS. These latrines have been built according to the design specifications shown in the Loan II Project Paper, with the exception that they have no vent pipe or wooden cover over the latrine seat. Inquiries at the SESPAS office in Santo Domingo revealed that SESPAS, as part of its normal sanitation responsibilities, developed new latrines in Palmarejo and Los Tramojos with its own funds. The Director of the SESPAS program, Mr. Ramon De Freitas, stated that they were only two villages in the Loan II program that were going to receive latrine assistance solely from SESPAS' funds.

The third village we visited was Las Yayitas, where a SESPAS crew was installing a hand pump at the time. The crew complained of insufficient supplies and tools for their work. An inspection of an already-installed hand pump in Las Yayitas indicated that it lacked grease on its moving parts and water was leaking from the screwed connection between the pump body and the pump base. In addition, the water at another pump was silty and, according to a local informant, was not used by the community for drinking purposes.

All of the above technical problems are fully appreciated by the Mission personnel, Mr. Thomas and Ing. Caba. They indicated that they routinely bring such problems to the attention of SESPAS personnel at every opportunity. The technical problems observed on 28 January were discussed with the Director of the SESPAS water and sanitation program that same afternoon. In general, the above problems are of a type and magnitude to be expected in a program of this nature.

Program Evaluation

The Project Paper describes three types of evaluations needed for the Loan II program. The first is termed a "Progress-to-Target and Management Evaluation" and is

intended to provide feedback for necessary adjustments to the program implementation schedule. Periodic evaluations after the 10th, 19th, 31st, 41st, and 50th months of the loan are scheduled. Discussions with Dr. Rivera revealed that these evaluations should be designed so that they also would be suitable for end-of-year reporting on program progress. The information need for these evaluations includes: number of participating communities, number of clinics upgraded, number of Promotores trained, number of pumps installed, number of latrines constructed, etc. This information is routinely collected by SESPAS and is on file at the Mission office.

The second and third types of evaluation described by the Project paper are termed "Project Purpose and Goal Level Evaluations." In these, research methods are proposed to measure progress in both participating and control communities against Loan II output, purpose, and sector/program goal. Unfortunately, the Project Paper fails to clearly define the two studies proposed for the program. In general, the evaluations are intended to show that the provision of potable water, latrines, and health education will reduce the incidence of diarrhea, gastro-enteritis, and parasitic disorders among young children and result a in lowering of infant and child mortality rates.

One of the proposed studies is directed exclusively at the collection and analysis of vital statistics in a random sample of 25 communities. Data on births and deaths up to the age of 4 years are to be collected by the Promotores in these villages and delivered to their supervisors on a weekly basis. In addition, a census and population mapping will be carried out annually in these villages by outside enumerators. All of these data are intended to be used in developing annual estimates of crude birth, infant mortality, and age-specific mortality rates for the 1 to 4 year age group. The Project Paper does not indicate the degree to which the water, sanitation, and health education interventions are to be controlled in the 25 sample villages. The implication is that these interventions will occur according to whatever program schedule is adopted and that the evaluation study will simply note the presence of any interventions and attempt to detect resulting changes in vital statistics.

The second proposed research study is intended to investigate the relationships between water, sanitation, and health education, on the one hand, and the incidence, prevalence, and duration of diarrhea on the other. Two hypotheses are proposed in the Project Paper. The first is that infant and preschool child mortality is depen-

dent upon the mix of interventions utilized, while the second is that the incidence, prevalence, and duration of diarrhea is related to this same mix. Although not stated by the Project Paper, it is assumed that diarrheal rates are to be determined only for infants and pre-school children. to test these hypotheses, the Project Paper suggests randomly selecting 12 villages and then providing four with potable water only, another four with water and sanitary latrines, and the last four with water, latrines, and health education. It is hoped that the measured differences in mortality and diarrheal rates over time in these 12 villages will show the effectiveness of differing mixes of interventions.

In discussing the two research studies proposed by the Project paper, Dr. Rivera and I both agreed that insufficient information was available to set up the evaluations at this time. Dr. Rivera indicated that the Mission was prepared to consider other evaluation designs and that it looked to WASH for guidance. We further agreed that a carefully developed impact study was needed to show the overall outcome of the project. At the same time, it would be useful for this study to incorporate the essential features of the two evaluations proposed in the Project Paper. However, since the water and sanitation interventions are unlikely to have any significant effect upon vital statistics and mortality rates in the course of the program, it is imperative that any impact study adopted for the Loan II program set out clearly measurable intermediate variables and targets.

An impact assessment model was discussed as a possible methodology for the evaluation of the Loan II program. As shown in Figure 1, the model sets out a sequential series of project consequences, starting with the actual project intervention and ending with the intended impacts, or benefits, of the project. The first level is the system operation, which is the actual construction of the water supply and/or latrine system. Evaluation at this level consists of determining if all technical features meet project specifications. This level is completely within the control of the project implementer. The next level involves the performance of the system, which means the use and maintenance of the facilities by the community. There are two aspects of importance: the use of the water and sanitation facilities by individual households and the overall support and maintenance of these facilities by the community. Evaluation variables, such as water quantities, quality, behavioral patterns, maintenance routines, revenue collection, and health education, can be defined to assess the overall performance of the system.

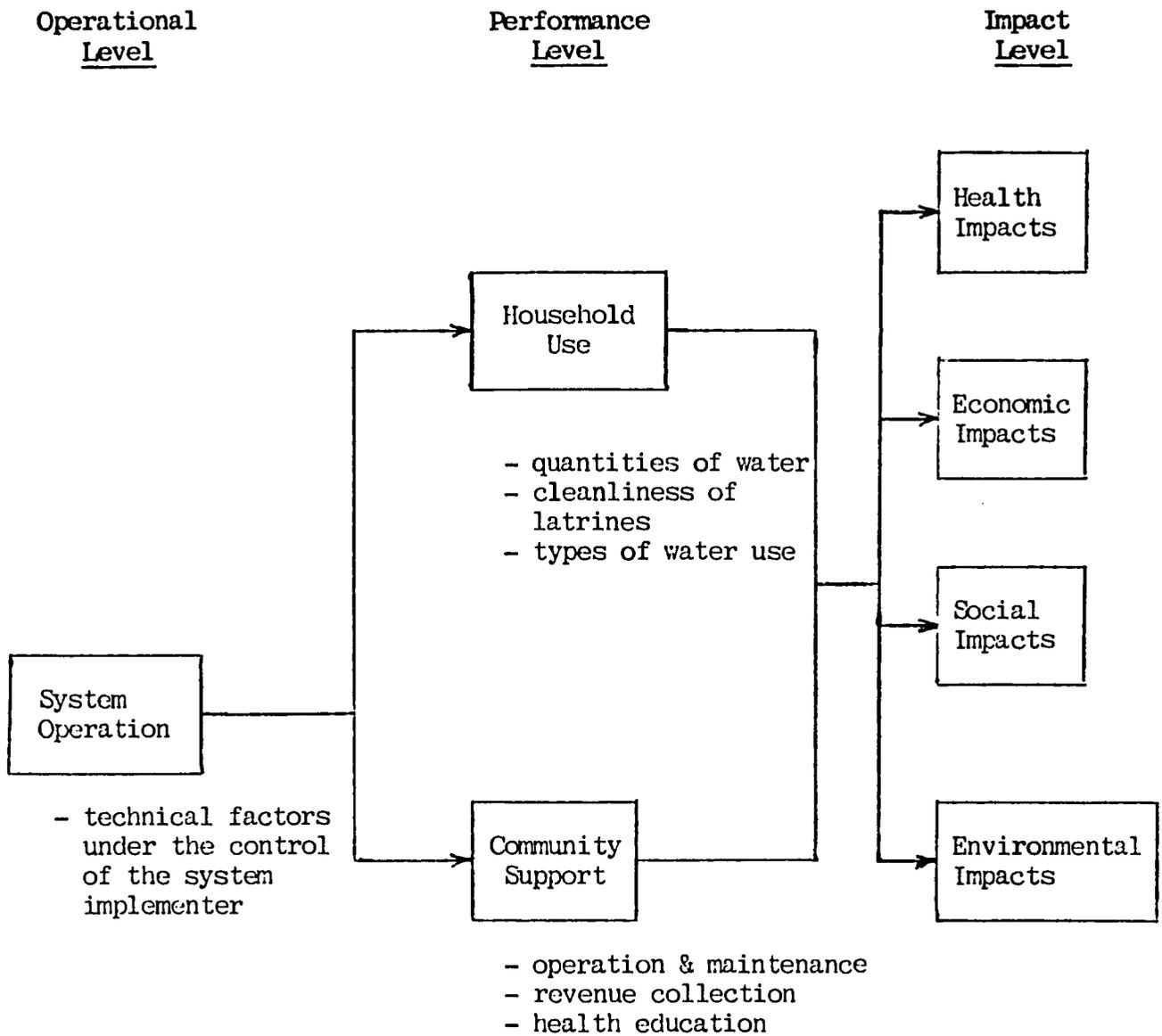


Figure 1. Impact Evaluation Model for Health Sector Loan II.

Since performance requires community participation, the changes observed at this level are only partially under the control of the system implementer. However, they are of great concern to program managers.

The third level in the model includes the ultimate health, economic, social, and environmental impacts of the project. These impacts are almost completely beyond the ability of the system implementer to directly control. It is not sufficient to simply provide potable water and sanitary latrines (level 1), the intermediate step of household usage and community support (level 2) must occur before the ultimate impacts, which are the project goals (level 3), can take place. To measure these ultimate impacts, therefore, it is necessary to establish measures for the intervening performance level.

It is expected that a model of the type shown in Figure 1 could be developed for the Loan II program. Information collected for the annual progress review could be used for the operational (level 1) measures. Much of the data required for assessments of mortality and diarrheal rates would be found in impact (level 3) measures. Annual assessments of randomly selected villages would be an effective means of determining baseline data, monitoring year-to-year progress, and accumulating information for a final impact assessment of the program.

An ethical question arises regarding the use of control villages in any research study. Withholding program assistance from certain communities for the sake of research is ethically questionable and politically dangerous. Several courses of action could be considered:

- (1) The question of using control villages could be left to the evaluation designer to resolve.
- (2) A one-time baseline study could be made of all communities, after which no attempt is made to control interventions.
- (3) A large control sample could be selected but no direct control over the choice of interventions would be made. Over time, some communities would receive assistance and thereby drop out of the control group. Those remaining in the unassisted group would continue to function as control communities.

Alternative 3 seemed to be the best resolution of the question of control communities. Consequently, the following sample sizes were selected for the proposed impact study:

20 control communities (no interventions)

- 10 communities with potable water
- 10 communities with water and sanitary latrines
- 10 communities with water, latrines, and health education

It is believed that the above sample size is adequate to carry out a comprehensive impact assessment of the project as well as assess the changes in mortality and diarrheal rates, which the Project Paper proposed to measure via the two research evaluations described earlier.

4. Plastic Water Containers

The Loan II Project Paper proposed that water be carried from the community water source to the house in 5-gallon covered plastic containers. Within the house, water is to be stored in 20-gallon covered plastic containers. The capacity and interest of local manufacturing plants to produce these containers was investigated.

Two plastics firms were visited, Polyplas Dominicana and Industries Asociados (INASCA). Polyplas produces an excellent 5-gallon container with a screw-on lid and carrying handle that is ideal for transporting water. The only question is whether the opening to the container, which is approximately 2-inches, is wide enough to use under handpump outlets without spilling and wasting water. If such spillage occurs, the users are likely to switch to a wide-mouth bucket or other container in order to speed up the filling process. The cost of these containers was quoted as \$3.75 for virgin polyethylene materials and \$2.50 for a mixture of plastic materials. Polyplas does not have the capability of making containers larger than 5 gallons, and it was reluctant to discuss the possibilities of making new molds. The sales agent for Polyplas referred us to the Manager (who was not available) for further information.

INASCA was quite willing to discuss household water containers. They can produce containers by blow molding, which costs \$250,000 for equipment and produces a maximum size of one gallon; by injection molding, which costs \$10,000 to \$15,000 per mold and has a maximum capacity of 30 gallons, and by rotational molding, which costs \$3,000 to \$4,000 per mold with a maximum capacity of 15 gallons. Injection molding has the disadvantage that the container opening must be as large as the container itself. Thus, an injection mold cannot be designed for a container with a small lid. Both polyethylene and polypropylene can be used in the above molding procedures. Polyethylene is more expensive, but it can be made in different densities and is very durable. Polypropylene is cheaper, but it is less flexible and

can easily crack.

For a pilot study involving only 500 water storage units, INASCA advised against making any special molds because of the high cost. Instead, they advised adapting existing containers until the effectiveness of the program was known. For a large water container, INASCA recommended their 25-gallon polyethylene trash can. The cost for the container and lid is \$8.80, exclusive of a small faucet which could be attached to the container.

For a household unit consisting of an upper container with ceramic filters and a lower container for the storage of filtered water, INASCA recommended using either two 8-gallon trash containers (total cost with lids = \$12.60) or two 3-gallon buckets (total cost with lids = \$4.50). In all cases the lid on the bottom container would have to be cut to support the top container and its projecting ceramic filters. The cutting of lids and of spaces for the filters can be done at little cost by INASCA. The units can be made more permanent by glueing the lids onto the top and bottom containers after cutting out the desired size of openings. If desired, a special collar can be made to join the top and bottom containers together tightly, but this would involve higher costs because of the necessity of making a new mold. Similarly, any changes in the lids themselves, other than cutting and glueing, would require new molds.

Although a production run of 500 units can be done within a couple days, new molds require 6 to 9 months to make. Simple PVC faucets are locally available and can be easily screwed into PVC flanges glued to the sides of the containers.

5. Ceramic Water Seal Latrines

In response to the Mission request, a number of documents describing water seal latrines were assembled in Washington and given to the Mission. A list of these documents is shown in Attachment 2.

People in the Dominican Republic prefer raised seats in their latrines. The Colombian ceramic pour flush pedestal unit as shown in Attachment 3, is the best available design for areas where an improved water seal toilet is desired. Two ceramics firms were visited. One specializes in making sanitary fixtures, while the other specializes in decorative plates and vases but was willing to make ceramic water seal toilets.

The primary ceramic firm, Ceramica del Caribe (Codelca),

has been in operation for only nine months. It manufactures toilets and wash basins. The plant is owned 50% by Spanish interests and 50% by Dominican investors. It is the only plant making sanitary fixtures in the country. Its capacity exceeds domestic demand, but it has not yet fully developed either the local or export markets. As a result, it is now running at about 35% capacity (approximately 32 employees at present). Cedelca does not make pour flush toilets; all of their units are designed for piped water connections. The manager indicated that unless 25,000 or more units were to be made, it was not worthwhile to develop a new mold for a pour flush toilet.

We inquired whether one of their existing flush toilet models could be used on a pour flush basis. They showed us a small Spanish model costing about \$20.00 which resembles the Colombian pour flush unit. The main question is the minimum amount of water needed to flush the unit. A Cedelca foreman was not certain but estimated that a minimum of one gallon was required. We told them this was probably too much for rural villages where the people would have to carry the water to the latrine. The manager said he would make inquiries to his head office in Spain with regard to the suitability of the unit for pour flush conditions and to the availability of the mold necessary to make further units. He also said he would inquire if any pour flush molds might be available. It will take about two weeks to obtain this information, which will be sent to the Mission office.

The ceramics firm willing to make the Colombian pour flush model is Clara's. To date, it has concentrated on decorative dishes, containers, and statuary. It is willing to make a mold of the Colombian model, but it would like to have an actual model to work from. I said a model might be available in Washington and it should be possible to obtain more detailed technical specifications. The owner of the firm said she would prepare a cost estimate for the work and send it to the Mission office.

It was apparent that Clara's did not have existing capability for making large numbers of pour flush toilets. The owner indicated they would probably obtain another furnace for such a job. Much of the work in Clara's is done on a manual, low volume basis, whereas the Cedelca plant is more highly automated with assembly line production.

6. Health Education Materials

The health education component of the program has yet to be designed. This component will require short-term

training plus materials for use in the project communities. The instruction should stress water supply, excreta disposal, solid wastes disposal, personal hygiene, and communicable diseases. The overall purpose of the health education inputs is to make the water supply and sanitation components of the program more effective in achieving program goals.

There are three levels of health education training required. The highest level is that needed for the UTOC panel (Unidad Technica Operaciones de Campo), who in turn will instruct Promoter Supervisors, who in turn will instruct Promotores, and who finally will deal directly with the members of the project communities. The UTOC panel will probably consist of six university graduates with backgrounds in sociology. They will have the responsibility of traveling around to the program areas to train and guide the Promoter Supervisors. For this purpose, the UTOC panel will require approximately two months of training in health education concepts.

The training that the UTOC panel gives to the 84 Promoter Supervisors can be provided through a variety of methods, including informal on-the-job instruction as well as two to three day workshops and seminars. The Promoter Supervisors, in turn, will give the Promotores one or more weeks of concentrated instruction plus periodic refresher courses in order that they understand the health aspects of water supply and waste disposal. The Promotores should be able to relay this information to the villagers and to local schoolchildren.

To achieve the above three levels of health education training, instructional materials for the UTOC panel, Promoter Supervisors, and Promotores are needed. In addition, educational materials such as charts, posters, and hand-out booklets are required for use in the villages and schools. These materials need to be developed as quickly as possible so that the health education component of the program can begin.

IV. RECOMMENDATIONS

1. Program Evaluation

WASH should assist in the design of an evaluation plan for the Health Sector Loan II. Two types of evaluation are needed: periodic program monitoring and comprehensive impact assessment. The first type should monitor the program implementation schedule and be designed to provide periodic evaluations at the 10th, 19th, 31st, 41st, and 50th months of the loan plus annual end-of-year progress reports for USAID/Washington. Most of the data for these evaluations is already being collected as part of the program.

The second type of evaluation should be a comprehensive impact assessment designed both to measure overall goal attainment and to investigate the research hypotheses stated in the Project Paper. A single study design should be developed to incorporate both aspects. It should be possible to utilize the data collected for the periodic monitoring evaluations in the larger impact evaluations. It is recommended that the impact assessment model shown in Figure 1 be considered as a basis for the design.

Because of the overall size and extent of the Health Sector Loan II program, it is recommended that the evaluation design be as rigorous as conditions will permit. If possible, varying mixes of program interventions should be utilized, as was described in the section on Issues and Findings. Attempts should be made to measure the resulting effectiveness of these different mixes. The results of this evaluation could have significance far beyond the Dominican Republic. If correlations can be shown between the types of program interventions and the resulting health impacts, the role of water and sanitation components in health programs will be strengthened and future programs can be made more effective.

To develop the above evaluation designs, it is recommended that two individuals with experience in rural water and sanitation programs, non-formal health education training, and field research methodology be sent to the Dominican Republic for a period of approximately three weeks. During this period they should become fully knowledgeable with regard to the evaluation needs of the Loan II program, determine the extent of the evaluation effort, assess the capacity of SESPAS (or other organizations) to perform the evaluations, and design evaluation studies to monitor program progress and to assess overall program impact. The specific disciplinary backgrounds of the two individuals is not too important as long as, between them, they have com-

petence in simple sanitary engineering, non-formal health education, epidemiological measurement, behavioral assessment, and statistical analyses. These individuals should begin work in the Dominican Republic as soon as possible.

2. Plastic Water Containers

It is recommended that the Mission establish a pilot program under Health Sector Loan II to test the suitability and use of various household water containers. Field investigations in five or six villages should be sufficient for this purpose. Half of the villages should be supplied with simple 20-gallon storage containers containing a tap and a lid. The other half of the pilot villages should be given storage containers containing ceramic filters and triocide disinfectant. In both cases, containers currently available in the Dominican Republic should be adapted for this purpose. Attempts should be made to keep the costs as low as possible. The Promotores in these pilot communities should collect information on the following questions:

- (1) Do the people use the containers regularly?
- (2) Are the lids kept in place?
- (3) Are the containers and filters cleaned regularly?
- (4) Do the people dip water out of the top of the containers instead of using the tap?
- (5) Do the people perceive the containers to be a valued improvement to their household possessions?

The study of container acceptability need not be rigorous in a research sense. It is likely that a two-month period of observation by the Promotores will be sufficient to establish if the program should provide household water storage containers and what characteristics are generally acceptable.

Once the acceptability of household containers is established, the Mission should decide whether off-the-shelf containers are satisfactory or whether new containers should be designed. Before distributing containers to all households in the Loan II program, a cost comparison of the two approaches should be made.

At the same time that the above field investigations are being conducted, USAID/Washington should prepare a detailed set of specifications and drawings for a variety of household water storage containers that could be manufactured in the Dominican Republic. Examples of commercial models in the United States should be sent to the Mission.

Ing. Caba of the Mission should continue to survey plastics manufacturers in the Santo Domingo area in order to determine their capabilities and willingness to produce household water containers.

3. Ceramic Water Seal Latrines

The immediate task is for the Mission to follow-up the inquiries made at Cedelca and Clara's regarding ceramic pour flush toilets. Cedelca has promised to provide information on the adaptation of an existing flush toilet model, Clara's has promised to provide an estimate of the cost of making ceramic units similar to the Colombian pour flush model. If either of these inquiries eventually leads to the production of ceramic units for the Loan II program, a small pilot effort should be initially set up to test the actual suitability of the model. There are a number of unresolved issues remaining, including the type of pit necessary and whether the people in the communities will be willing to carry water to their latrines. The last question, in particular, must be resolved before any extensive distribution of water seal latrines occurs.

The pilot effort for the water seal latrines need not be as extensive as that for the household water containers. It is recommended that a sample of three or four villages be selected for this purpose. Within each village, a small proportion of households, say one-fourth, could be provided with water seal latrines with the remainder supplied with the standard cast concrete seat and wooden cover. As in the case of water containers, the Promotores should be used to collect household usage data over a period of two months.

In addition to the above development of a suitable water seal latrine, the Mission should encourage SESPAS to improve the quality control of the cast concrete toilet risers. Unless a smoother, more uniform surface is developed on these risers, they are unlikely to find widespread acceptance among the people. Particular attention also should be given to the provision of vent pipes and riser covers in all future latrines.

It is further recommended that USAID/Washington provide detailed manufacturing specifications of the Colombian pour-flush latrine to the Mission. If possible, the Mission also should be provided with a model of the Colombian unit to show to local ceramics firms.

4. Health Education Materials

WASH should assist in the design of health education training materials for Loan II. As described in Section

III, separate materials are needed for the training of the UTOC panel, the Promoter Supervisors, and the Promotores. For each level of personnel, there should be established an instructional program which specifies the type and duration of training, instructional topics, and other materials, such as books, pamphlets, posters, etc. The emphasis in all three levels of instruction should be on the non-formal and practical aspects of health education, since none of the personnel for whom these materials are intended are health professionals. In addition, the Promotores should be provided with simple written material and posters to use in their work with community members and schoolchildren.

It is recommended that one individual with extensive experience in non-formal health education training for water and sanitation programs be sent to the Dominican Republic for a period of approximately three weeks to design the above materials. This person should be fluent in Spanish in order to understand the needs of the field personnel. Since the program is at a stage where the lack of an effective health education component is beginning to be noticeable, this assistance should be provided to the Mission as soon as possible.

ACTION
COPY

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Attachment 1
INCOMING
TELEGRAM

PAGE 01 SANTO 08756 102228Z
ACTION AID-35

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SANTO 08756 102228Z

017696 A100911

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FM AMEMBASSY SANTO DOMINGO
TO SECSTATE WASHDC 6823

UNCLAS SANTO DOMINGO 3756

AIDAC

E.O. 12065: N/A

TAGS:

SUBJECT: WATER AND SANITATION FOR HEALTH (WASH) PROJECT
RESOURCE FOR AID

REF: STATE 278993

1. MISSION WELCOMES OPPORTUNITY PRESENTED BY WASH PROGRAM AND BELIEVES IT WILL PROVE TO BE AN EFFICIENT AGENT TO CARRY OUT KEY ACTIVITIES FOR HOST COUNTRY IN SUPPORT USAID'S HEALTH PROGRAM.

2. IN PARTICULAR, MISSION IS INTERESTED IN OBTAINING SERVICES FROM WASH IN THE FOLLOWING AREAS:

A. EVALUATION:

1. ASSISTANCE IS NEEDED IN ORDER TO HELP HOST GOVERNMENT DESIGN AN EVALUATION PLAN FOR THE \$3 MILLION AID HEALTH SECTOR LOAN II (S17-U-823) PROGRAM. THIS PLAN SHOULD PROVIDE FOR PERIODIC JOINT REVIEWS AND INCLUDE THE FOLLOWING POINTS:

- A. EVALUATION OF PROGRESS TOWARD ATTAINMENT OF THE OBJECTIVES OF THE PROJECT;
- B. IDENTIFICATION AND EVALUATION OF PROBLEM AREAS OR CONSTRAINTS WHICH MAY INHIBIT SUCH ATTAINMENT;
- C. ASSESSMENT OF HOW SUCH INFORMATION MAY BE USED TO HELP OVER COME SUCH PROBLEMS; AND
- D. EVALUATION TO THE DEGREE FEASIBLE, OF THE OVERALL DEVELOPMENT IMPACT OF THE PROJECT.

SINCE THE FIRST EVALUATION SHOULD BE COMPLETED BY DECEMBER 1980, ASSISTANCE TO DEVELOP THE PLAN SHOULD BEGIN WITHIN UPCOMING MONTH. IT IS EXPECTED THAT THREE WEEKS OF ASSISTANCE SHOULD BE ADEQUATE TO DEVELOP THE PLAN.

2. ASSISTANCE IS ALSO NEEDED IN CARRYING OUT THE PERIODIC PROGRAM EVALUATIONS. IT IS EXPECTED THAT THERE MAY BE THREE OR FOUR EVALUATIONS DURING THE PROJECT. EVALUATIONS SHOULD PROVIDE FOR A SIGNIFICANT LEVEL OF STATISTICAL MEASUREMENT AND SHOULD TAKE NO MORE THAN A MONTH OF FIELD WORK. REPORTS NEED TO BE IN SPANISH AND ENGLISH AND SHOULD CONFORM TO AID STANDARD REQUIREMENTS FOR EVALUATION (AID FORM 1330-15 AND 15A). HEALTH SECTOR II EVALUATIONS ARE TENTATIVELY SCHEDULED FOR DECEMBER 1980, 1981, 1982 AND 1983. IN ADDITION A FINAL EVALUATION FOR THE HEALTH SECTOR LOAN I (S17-U-823) PROGRAM IS PLANNED FOR APRIL 1981. ASSISTANCE FOR THESE EVALUATIONS SHOULD BE TIMED ACCORDINGLY.

3. IT IS RECOMMENDED THAT THE KEY PERSONNEL OF EVALUATION TEAMS INCLUDE INDIVIDUALS WITH PRIOR EVALUATION EXPERIENCE IN SIMILAR HEALTH PROGRAMS. ALL KEY MEMBERS SHOULD BE FLUENT IN SPANISH.

B. PROJECT IMPLEMENTATION:

1. MISSION WILL REQUIRE PERIODIC ASSISTANCE UNDER HEALTH SECTOR II PROGRAM IN ADVISING GOOR ON THE QUALITY CONTROL PROCEDURES IN THE MANUFACTURE OF HAND PUMPS. UNDER THE PROJECT, A LOCAL FIRM HAS INITIATED PRODUCTION OF THE AID/BATELLE PUMP. GEORGIA TECH UNIVERSITY HAS PROVIDED ASSISTANCE IN THE DESIGN OF THE PUMPS AND IS CURRENTLY PROVIDING QUALITY CONTROL ASSISTANCE FUNDED BY AID/W. MISSION IS VERY SATISFIED WITH THIS ASSISTANCE AND PROPOSES THAT IT BE EXTENDED UNDER THE WASH PROGRAM TO PROVIDE

QUALITY CONTROL ADVICE THROUGHOUT THE LIFE OF THE PROJECT

2. UNDER THE AID HEALTH II PROGRAM AN ESTIMATED 2,550 WELLS AND PUMPS WILL BE PROVIDED TO RURAL AREAS. IN ADDITION GRAVITY-FLOW SYSTEMS WILL BE CONSTRUCTED. MAINTAINING THE WATER QUALITY IN ACCORDANCE WITH HEALTH STANDARDS AFTER CONSTRUCTION OF THE SYSTEM IS AN ISSUE WHICH NEEDS TO BE STUDIED. THE HOST COUNTRY NEEDS TO FIND AN ECONOMICAL AND CONVENIENT WAY TO TREAT A GIVEN WATER SYSTEM IN THE EVENT IT IS NEEDED. IT IS RECOMMENDED THAT AN EXPERT WHO IS FLUENT IN SPANISH BE INCLUDED ON THIS ASSIGNMENT.

3. UNDER THE AID HEALTH II PROGRAM, PROCUREMENT OF 26,500 FIVE GALLON AND 26,500 TWENTY GALLON PLASTIC CONTAINERS IS CONTEMPLATED. THE CONTAINERS ARE TO BE USED BY PROJECT PARTICIPANTS TO CARRY WATER TO HOMES AND STORE IT IN A MORE SANITARY MANNER TO REDUCE ITS CONTAMINATION. SPECIFIC DESIGN OF THESE CONTAINERS DEPENDS ON VARIOUS LOCAL CONDITIONS (I.E., USE OF CHILDREN TO CARRY WATER, ETC.) GIVEN THAT THE FIRST SERIES OF WATER SYSTEMS WILL BE COMPLETED IN NEXT FEW MONTHS, ASSISTANCE IN PREPARING SPECIFICATIONS FOR THE PROCUREMENT OF THESE CONTAINERS IS VERY IMPORTANT AND SHOULD BE PROVIDED WITHIN THE UPCOMING MONTH. THESE SPECIFICATIONS SHOULD BE IN ENGLISH AND SPANISH AND SHOULD CONFORM WITH THE AID H.B. II REQUIREMENTS FOR HOST COUNTRY CONTRACTING.

4. IN ORDER TO SUPPORT THE POTABLE WATER AND SEWAGE DISPOSAL ACTIVITIES IN THE AID HEALTH-II PROGRAM, AN INTENSIVE RURAL HEALTH EDUCATION CAMPAIGN IS ALSO CONTEMPLATED. THIS CAMPAIGN WILL BE CARRIED OUT BY SBS HEALTH EDUCATORS. AN ESSENTIAL PART OF THIS CAMPAIGN WILL BE THE EDUCATION MATERIALS TO BE USED. ASSISTANCE IS REQUESTED TO DESIGN THESE MATERIALS. THIS ASSISTANCE SHOULD BEGIN WITHIN UPCOMING MONTH.
YOST

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TELEGRAM

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FOR: DSPHEA - VIC WEHMAN

EO 12065: N/A
SUBJ: PROCUREMENT OF WATER SEALED LATRINES AND WATER CONTAINERS
UNDER HEALTH SECTOR LOAN II

1. MISSION INTERESTED IN GETTING INFORMATION AS TO SOURCE,
COSTS, AND SPECIFICATIONS OF "WATER SEAL" LATRINES FOR A LIMITED
PILOT STUDY TO DETERMINE THEIR ACCEPTABILITY IN RURAL COMMUNITIES
UNDER HEALTH SECTOR LOAN II.

2. UNDER THE SAME LOAN THERE IS INTEREST IN PROVIDING FIVE
AND TWENTY GALLONS WATER CONTAINERS TO EVERY FAMILY (TOTAL OF
25,500 OF EACH). THE FIVE GALLONS CONTAINERS WILL BE USED TO
CARRY WATER FROM COMMUNITY OUTLETS AND SHOULD HAVE A NARROW
NECK, A PROTECTIVE CAP WHICH WILL BE ATTACHED TO THE CONTAINER
TO PREVENT ITS LOSS OR CONTAMINATION BY DROPPING, AND A CARRYING
HANDLE. THE TWENTY GALLONS CONTAINER WILL BE USED FOR HOUSEHOLD
STORAGE, SHOULD HAVE A NARROW NECK, AN ATTACHED PROTECTIVE CAP
AND A TAP.

MISSION INTERESTED IN GETTING INFORMATION AS TO DETAILED
SPECIFICATIONS, PROBABLE COST PER UNIT, SOURCES AND ANY OTHER
INFORMATION CONSIDERED OF INTEREST FOR A POSSIBLE ADVERTISEMENT
FOR BIDS.

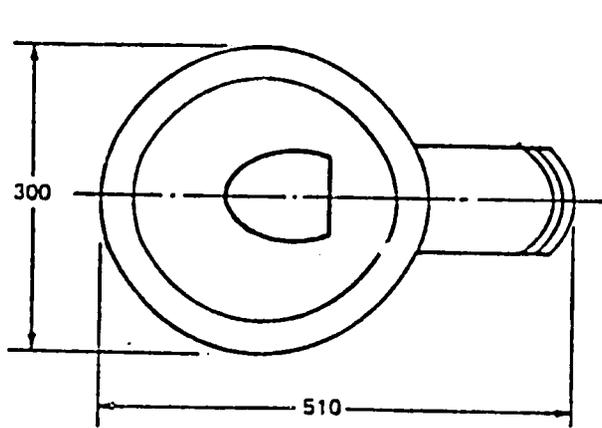
3. MISSION WOULD APPRECIATE YOUR OPINION AS TO ADVISABILITY OF
USING WATER FILTERS IN EVERY HOUSE, AS OPPOSED TO PURCHASING
EXPENSIVE STORAGE CONTAINERS. EXPERIENCE WITH WATER FILTERS
IN OTHER PROJECTS WILL BE OF INTEREST TO OUR PROJECT.
YOST

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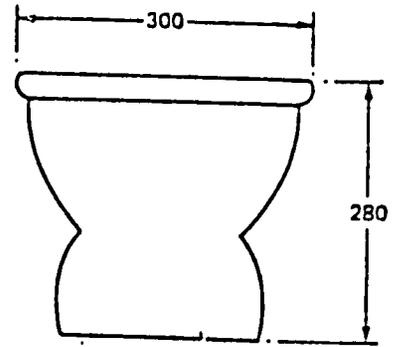
Attachment 2
Documents on Water Seal Latrines
Given to the Mission

1. Wagner & Lanoix, Excreta Disposal for Rural Areas, 1958.
2. Katadyn, Crystal Clear and Purified Water, discussion on various filters.
3. Thailand's Water-Seal Privy Program: A Procedural and Technical Review.
4. Figure 9-12: The Colombian Ceramic Pour-flush Pedestal Unit
5. Village Technology Handbook, VITA
6. Appropriate Sanitation Alternatives, A Field Manual, The World Bank, February 1980.
7. Appropriate Sanitation Alternatives, A Field Manual, The World Bank, October 1978.
8. The Chiangmai Water-Seal Latrine Slab, World Health Organization, December 1955.
9. A Simplified Approach to Aqua Privy Construction, P.A. Oluwande, Univesity of Ibadan, Nigeria.
10. Techniques & Technologies, Water Seal Latrines
11. Water-Seal Latrine, World Health Organization, December 1955.
12. Wooden Water-Sealed Toilet
13. Miscellaneous photographs

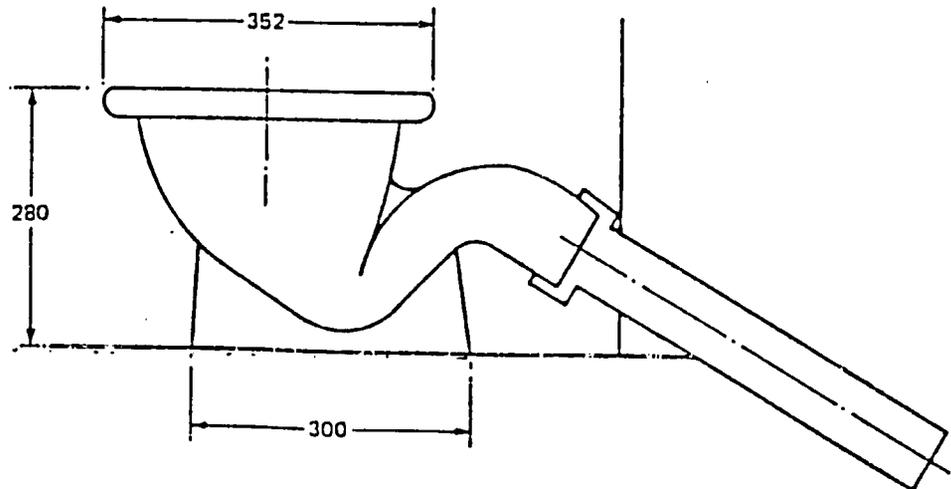
Attachment 3 The Colombian Ceramic Pour-flush Pedestal Unit
(measurements in millimeters)



Top view



End view



Side view

Attachment 4

Addresses of Plastics and Ceramics Manufacturers in Santo Domingo

INASCA



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GERENTE DE VENTAS

Francisco Vélez
DEPARTAMENTO DE VENTAS

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ANIBAL DE ESPINOSA 301
SANTO DOMINGO, R.D.

Tel.: 565-4456

Plastics Manufacturers

CLARAS EXCLUSIVIDADES
Cerámica y Jardinería

 CERAMICA DEL CARIBE, S.A.

Clara de Amengual
Presidente - Tesorero

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Gerente Administrativo

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SAN CRISTOBAL,
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Ceramics Manufacturers