



Activity Report 125

Combining Hygiene Behavior Change with Water & Sanitation: A Pilot Project in Hato Mayor, Dominican Republic

April 2000 – May 2002

by

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February 2004

Prepared under EHP Project 26568/CESH.DR.YR4

Environmental Health Project
Contract HRN-I-00-99-00011-00
is sponsored by the
Office of Health, Infectious Diseases and Nutrition
Bureau for Global Health
U.S. Agency for International Development
Washington, DC 20523

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Acronyms

ASOCAR	Association of Rural Water Systems Committees
CESH	Community-Based Environmental Sanitation and Hygiene
C-IMCI	Community-Based Integrated Management of Childhood Illnesses
CRS	Catholic Relief Services
DHS	Demographic Health Surveys
DIGPRES	General Directorate for Health Education and Promotion, Ministry of Health
EHP	Environmental Health Project
ENTRENA	Umbrella NGO that coordinated NGO involvement in RECON
HIF	Hygiene Improvement Framework
INAPA	Regional Water and Sewer Authority
KAP	Knowledge, Attitudes, and Practices
MUDE	Women in Development
NGO	Non-governmental Organization
ORS	Oral Rehydration Salts
PAHO	Pan-American Health Organization
PVO	Private Voluntary Organization
RECON	Hurricane Georges Reconstruction Project
SESPAS	Ministry of Health and Social Welfare
SSID	Social Services of Dominican Republic Churches
TCP	Total Community Participation Approach

TIPs

Trials of Improved Practices

USAID

United States Agency for International Development

About the Authors

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Acknowledgements

The development of the project was made possible owing to the support and participation of many important groups and persons that offered their skills, time, and experience:

The directors and technical staff of CRS, MUDE, INAPA, SESPAS, USAID/Dominican Republic, the Peace Corps, and PAHO.

- Community leaders, officials, and providers of various community, municipal, and government services in the area of Hato Mayor.
- The project managers and supervisors from USAID headquarters in Washington, D.C., —John Austin and John Borrazzo—and from USAID/Dominican Republic—Roberto Kolesar and Kelva Perez.
- Administrative and technical staff assigned to this project from EHP: Masee Bateman, Eddy Perez, Fred Rosensweig, Ana María Dillon, and Flady Cordero.

Many other individuals dedicated time and energy to this activity, as shown below:

- Directors from ENTRENA: John Seibel, Mayra Toribio, Federico Peña, Fco Xavier.
- Specialists enrolled in the activity from INAPA, DIGPRES, the Peace Corps, MUDE, SSID, and CRS: Candida Gil, Victoria Cruz, Paula de la Fuente, Carlos Urena, Mignolis Guzman, Celia Miosotis.
- Specialists in other areas: draftsmen and radio librettists.

The authors apologize for involuntary omissions and ignorance of the names of other relevant persons who also participated in the activities.

Executive Summary

In the summer of 2000, the United States Agency for International Development (USAID)/Dominican Republic initiated a project to add hygiene behavior activities to a water and sanitation construction program (RECON) launched by USAID in 1999 to repair the damage wreaked by Hurricane Georges. The RECON program had a \$7 million health component that included community-based integrated management of childhood illnesses but no specific attention to hygiene. USAID requested the Environmental Health Project (EHP) to provide technical assistance to incorporate the behavior-change approach, the goal being to increase the health impact of the water and sanitation projects.

The project evolved in two phases. In the first phase (April 2000–March 2001), intensive training in behavior-change techniques was given to about 40 personnel from the 16 non-governmental organizations (NGOs) and other government agencies that were involved in RECON. It consisted of two workshops in which trainees learned about the behavior-change methodology and its application to diarrheal disease prevention. Trainees went through the process of creating and testing materials and honing communications skills.

In the second phase (February 2001–May 2002), two NGOs—Catholic Relief Services (CRS) and Women for Development (Mujeres en Desarrollo) (MUDE)—working in the municipality of Hato Mayor were selected to participate in a pilot project implementing behavior-change activities in nine communities in the municipality of Hato Mayor where RECON activities were just getting started. The participating NGOs were trained as health promoters and were given technical assistance to develop, field-test, and use materials aimed at improving hygiene behaviors and preventing diarrhea, especially among children under-five.

The behavior-change approach to hygiene used in the Dominican Republic pilot project involved: *Qualitative or formative* research to identify the behaviors that need improvement as well as the obstacles to adoption of those behavior and possible motivating forces; *Baseline assessment/Quantitative* research (knowledge, attitudes, practices) focusing on the behaviors to be addressed and for follow-up assessments; *Community involvement* in developing the strategy, identifying the target behaviors, producing and testing educational materials, and conducting periodic assessments; *Health promoter training* concentrating on practical communication, negotiation and interpersonal skills, rather than on transmitting specific messages or concepts and most important, an approach focusing on changing behaviors, not merely on increasing knowledge.

The seven behaviors emphasized in the pilot project included:

- Maintenance of an uncontaminated drinking water supply

- Latrine use for children over three years of age
- Latrine use by all family members
- Use of potties for children under three followed by disposal of feces in the latrine
- Handwashing for all household members at critical times (after defecation and before eating) and with critical techniques (using water and soap, rubbing at least three times, and drying hygienically)
- Handwashing at critical times especially for mothers (after cleansing a child or changing a diaper, before preparing or serving food or before feeding a child)
- Promotion of a permanent place for handwashing.

The second phase of the project ended with a mid-term assessment. The mid-term assessment yielded interesting results but was limited in several respects. Because no pre-hardware baseline had been established, it was not possible to measure the impact of the water and sanitation interventions (which were ongoing) independent from the impact of hygiene behavior-change activities. In addition, since the sample was not randomized, the findings cannot be generalized beyond the households surveyed. (More information about the mid-term assessment is documented in the EHP Activity Report 120 “*Combining Hygiene Behavior Change with Water and Sanitation: Monitoring Progress in Hato Mayor, Dominican Republic.*”)

Nevertheless, the major health and behavior-change results are as follows:

- The mean diarrhea prevalence for children under five (two-week recall) declined from 27% at baseline to 11% at mid-term. However, this decline cannot be linked directly or exclusively to behavior-change interventions given the limitation mentioned above.
- Reported handwashing of caretakers of children under five after defecation increased from 54% at baseline to 66% at mid-term.
- At baseline, 15% of caretakers reported that they washed the youngest child’s hands after the child defecated, compared with 31% at midterm. Handwashing before the child ate increased from 33% to 55%.
- A highly significant increase in the presence of a permanent, designated handwashing location was noted: from 33% at baseline to 62% at mid-term.
- Use of soap for handwashing, as demonstrated by those surveyed, increased from 59% to 79%.

- At baseline, 47% rubbed their hands together three times or more when demonstrating how they washed their hands, compared with 76% at midterm.

Overall, the findings are suggestive of the effect of the hygiene behavior-change interventions. Additional research is necessary to gain a better understanding of the effects of project activities.

Furthermore,

- The 23 promoters attained a good understanding of the health message and content that they were responsible for communicating, increased their interpersonal skills, and were trusted and well-received by the community members. The negotiating aspect of their counseling needed improvement.
- Technicians from participating NGOs and other partner organizations received training in the behavior-change methodology and can train others.
- Support and educational materials were prepared and have been assembled by PAHO/Dominican Republic and distributed to other NGOs.
- The project forged a number of institutional partnerships that will assist in dissemination, especially between EHP and PAHO/Dominican Republic and between the Water and Sanitation Authority and the Ministry of Health in the Dominican Republic.
- Follow-up assessments are planned.

Lessons learned from this two-phase project are also likely to be applied because of the follow-on activities and continuity in the team that has provided advisory assistance.

Major lessons are:

- When water and sanitation infrastructure is in place in target communities it facilitates behavior-change
- A clear understanding by program implementers of all the elements of the behavior-change approach is necessary to ensure that all key elements are implemented.
- Institutions that wish to use the behavior-change methodology can do so effectively by creating a coherent and balanced team of technicians knowledgeable in communications, counseling, and research.

- The results of research carried out in behavior-change programs are very useful to water and sanitation technicians in the development of user-friendly water and sanitation technology/facilities/hardware that respond to the needs of users.

Additional funds are being applied through 2003 and 2004 to continue the work of health promoters in Hato Mayor, for additional assessments and to replicate the approach elsewhere in the Dominican Republic, Nicaragua and Peru.

1. Overview

1.1. Project Inception

In September 1998, Hurricane Georges swept through the Dominican Republic causing major damage to infrastructure and agriculture in 14 provinces and the National District. In response, the U.S. Agency for International Development (USAID) launched a comprehensive reconstruction activity in 1999 with a \$7 million health component that included community-based integrated management of childhood illnesses (C-IMCI), construction and reconstruction of water systems and latrines, and health education. The Hurricane Georges Reconstruction Project (RECON) was implemented through 16 non-governmental organizations (NGOs) under the aegis of, ENTRENA, an umbrella NGO that coordinated NGO involvement in RECON.

The need for significant improvements in water supply, sanitation, and hygiene in the Dominican Republic is great: in early 1998, an estimated 35% of the total population in the country lacked access to safe drinking water and 40% lacked access to adequate sanitation. The picture is bleaker in rural areas, and the situation dramatically worsened after Hurricane Georges struck.

In the summer of 2000, after one year of RECON project activities, USAID/Santo Domingo decided to take steps to maximize the health impact of the water and sanitation improvements through a concerted effort to include a strong behavior-change component in the ongoing water supply, sanitation, and hygiene activities. The mission requested that the Environmental Health Project (EHP) provide technical assistance to support incorporation of behavior-change approaches.

USAID focused on the behavior-change approach with the expectation that simultaneously providing infrastructure and carrying out behavior-change interventions would ultimately produce significant benefits for children under five, who experience high rates of diarrheal disease mortality and morbidity.

1.2. Project Characteristics

The RECON project placed considerable emphasis on the construction of water systems by the National Sewer and Water Authority (Instituto Nacional de Alcantarillados y Agua) (INAPA), with community participation and involvement in the transfer and future maintenance of the systems using the total community participation (TCP) approach. In the approach, the community participates in the

building of infrastructure and then assumes ownership and responsibility for its maintenance. As part of the same project, latrines were built for all homes. Thus, behavior change took place within the context of significant infrastructure improvements and ongoing community organization and participation.

Additionally, the project's strategy was consistent with EHP's Hygiene Improvement Framework, an integrated approach that combines access to hardware (water and sanitation systems, and household technologies); hygiene promotion; and an enabling environment. Experiences have shown that hygiene improvements are more likely when communities have access to necessary infrastructure and technologies (water, sanitation, water-storage tanks, etc.); when hygiene behavior-change is promoted (through social marketing, community mobilization, etc.); and when both efforts were supported by an "enabling environment."

It was also a *multi-agency project*. Two government agencies—INAPA and SESPAS—participated in the project. Also participating were Catholic Relief Services (CRS) (a private voluntary organization (PVO)), Women in Development (Mujeres en Desarrollo) (MUDE) and Social Services of Dominican Republic Churches (Servicio Social de las Iglesias Dominicanas) (SSID) (nongovernmental organizations (NGOs)), and the Peace Corps and PAHO (international organizations).

Lastly, the project's behavior-change approach was consistent with social marketing principles. The behavior-change approach was wholly client-oriented—the client being the communities—and included management of the four basic pillars of social marketing: product, price, place, and promotion. Key tasks were carried out together with the target audience to ensure the usefulness and acceptability of the approach, which also included mechanisms to ensure control over project implementation through periodic assessments compared with a baseline.

1.3. Project Phases

EHP provided technical assistance in two phases.

- *Phase One: Behavior-Change Training.* In the first phase, intensive training in behavior-change techniques was given to about 40 personnel from 16 NGOs that were involved in the RECON project, plus personnel from the Ministry of Health (Secretaria de Estado de Salud Prevision y Asistencia Social) (SESPAS), INAPA, USAID, and the Pan-American Health Organization (PAHO). The goal of the training was to strengthen the capacity of the NGOs to design and implement behavior-change activities. The first phase began in April 2000 and ended in March 2001.
- *Phase Two: Pilot Project in Hato Mayor.* The second phase was a pilot project to assist two NGOs working in the town of Hato Mayor to implement and document hygiene behavior-change interventions that had been introduced in the training. With the aid of intermittent technical assistance, the NGOs developed and field

tested materials aimed at improving hygiene behaviors and preventing diarrhea, especially among children under age five. This phase was fairly short, beginning in February 2001 and ending in December 2001, when RECON funds had to be completely expended. Subsequently, the project was extended to 2004 to continue the activities of the community health workers, to demonstrate the impact of project activities, and to assist in replicating the pilot in other areas and countries. (See Section 9)

1.4. Content of This Report

This report summarizes information about EHP's technical assistance by discussing the following topics:

The health conditions addressed

- The essentials of the behavior-change strategy
- The details of technical assistance provided
- The results achieved
- The lessons learned and recommendations for applying the pilot elsewhere.

It should be noted that this report does not provide final project results, but rather illustrates the degree of progress achieved by May 2002, after five months of intervention activities in Hato Mayor. The communities will continue to implement activities aimed at promoting healthy behaviors through their promoters, with encouragement provided by technicians from the two NGOs. Follow-up assessments are planned for 2003 and 2004.

2. The Role of Behavior Change in Diarrheal Disease Prevention

2.1. Diarrheal Disease Transmission

Diarrheal disease is one of the principal causes of death in children, and it contributes to malnutrition, which in turn affects children's growth and development. Worldwide, 1.3 million children under-five die annually from diarrhea.

Diarrhea is caused by ingestion of pathogens found in the feces of human beings and certain animals and birds. When excreta are disposed of improperly, agricultural fields, water, food, people's hands, and household objects can be contaminated.

- Food may be contaminated as a result of unsanitary transportation or handling or through irrigation of fields with contaminated water. Or it may become contaminated through contact with a contaminated food preparation surfaces or utensils or someone's unwashed hands. Food may also be contaminated if the water used to wash it is not safe.
- Water may be contaminated in the same manner as food. Also, water can be contaminated as a result of broken water lines, leaks, incomplete treatment, storage in contaminated cisterns, tanks, or kitchen vessels. Some water is untreated.
- Pathogens are ingested when contaminated hands and objects come into contact with the mouth. Generally people's hands become contaminated because they fail to wash them after defecating or changing a child's diaper or cleaning a child's bottom. Also, people's hands may be contaminated by touching manure, dust, or objects that have come in contact with excreta.

In 2000, in the Dominican Republic, 16.9% of people living in urban areas and 49.3% of those in rural areas lacked access to potable water services, and 4.4% in urban areas and 21.3% in rural lacked access to sanitation. The percentage of children under five with reported diarrhea in the previous two weeks was 15.4% in urban areas and 17.9% in rural areas (*Evaluacion de los Servicios de Agua Potable y Saneamiento 2000 en las Americas, PAHO*).

In Hato Mayor, baseline data collected by the pilot project in December 2001 revealed that 27% of the children in the project communities had had diarrhea in the two preceding weeks. This is higher than the rural prevalence rate for the Dominican Republic. All households in the pilot area had access to a sanitation facility and an improved water source.

2.2. Diarrheal Disease Prevention

Diarrheal disease can be prevented if:

- Barriers are created to keep infectious organisms out of the household environment
- People avoid coming into contact with organisms that may overcome the barrier
- People destroy the organisms that may overcome the barrier.

The household environment may be protected by disposing of human excreta in a sanitary way, including decontamination of hands and cleansing materials. Water should be disinfected before drinking; kitchen utensils should be protected and disinfected; animals and birds should be prevented from coming into contact with water or food; and food should be thoroughly washed, peeled, or cooked.

These preventive interventions all depend on people's actions or habits. In short, new behaviors must be adopted or existing ones adapted to interrupt transmission of pathogens.

2.3. Behavior-change Approach

Behavior-change methodologies are widely understood and have been applied in many health-and-education areas. Fostering behavior change, as opposed to simply increasing people's knowledge, must be based on an understanding of how families think and behave, what resources they have, the constraints and limitations they encounter, and the reasons they may resist change.

Behavior change is achieved in six phases, all of which require community outreach and broad community participation. The first four phases consist of preparatory activities, and the last two of implementation:

- First Phase: Assessment of the behavioral skills of the participants (e.g., project implementers—NGOs, Ministry of Health representatives, INAPA), application of formative research (to identify current behaviors and factors, which support or serve as barriers to adoption of these practices)in the communities; development of targeted alternative behaviors and a draft strategy.

- Second Phase: Testing of concept and strategy, implementation of trials of improved practices (TIPs) (e.g., in which selected households try out targeted behaviors that are modified as needed), generation of promotional materials.
- Third Phase: Pre-testing of materials, preparation of a quantitative baseline, preparation of a manual for promoters, appointment of a cadre of promoters to be trained in the next phase.
- Fourth Phase: Training of community volunteers, preparation of a monitoring (periodic visits to targeted households—negotiated behaviors are monitored over time) and follow-up plan, launching (including introduction and certification of the promoters).
- Fifth Phase: Monitoring community activities, conducting a mid-term assessment.
- Sixth Phase: Measurement of changes in behavior and disease prevalence based on a final survey (at approximately 14 months after the launch).

The pilot project in Hato Mayor made some adaptations in the basic behavior-change methodology so that it would be possible for most NGOs, given their budgetary capacities, to complete the necessary steps over a two-year period. One important adaptation was to carry out the formative research in ten days, rather than the more normal duration of a month. Similarly, the pilot project optimized the use of time devoted to other activities and minimized the number of personnel involved (see Annex 1 for a detailed Behavior-change Approach).

3. Phase One: Behavior-change Training

3.1. Background

Originally, the USAID initiative to provide 16 NGOs with support in implementing sanitation and hygiene projects under RECON did not include behavior-change approaches. EHP, which had been involved in the Dominican Republic in a policy-improvement project aimed at promoting community ownership of water and sanitation systems, submitted a proposal to the NGOs for improving their project interventions through the use of behavior-change techniques. At the time the proposal was submitted, it was still possible to think in terms of influencing the orientation of about 30% of the projects. These were in the initial phases of implementation under the second installment of RECON funding.

The EHP proposal offered technical assistance in the form of systematic training to the technical staffs of the NGOs to be applied to their ongoing sanitation and hygiene projects. The projects were to be modified, particularly in regard to their educational components, to achieve specific changes in behavior that would contribute to the prevention of diarrhea in children under age two—those at greatest risk. Thirteen of the 16 NGO project managers showed interest in the proposal and gave their staffs permission to receive the training.

3.2. The Status of Participating NGOs

Prior to the training workshops, a baseline evaluation of the 13 NGOs was carried out to assure that the workshops would be tailored to the needs and experience of the trainees. The evaluation reviewed project documents that had been submitted to ENTRENA and interviewed the 13 NGO managers. Questions focused on the extent to which behavior-change strategies were already being used. For example:

- What water- and latrine-related behavior changes for diarrhea prevention were being proposed?
- What type of baseline research had been carried out to identify target behaviors?
- What communication and educational materials and activities were being developed?

- What type of training was envisioned for those who would use the materials with the communities?
- What follow-up activities were planned to ensure that changes in behavior actually were made?
- What mechanisms were being provided for measuring trends or impact?

The evaluation found that most NGOs believed they had some expertise in behavior change, except as regards preparation of information and communication materials; however, this expertise was often not present within the organization itself, but was found among external technicians that subcontracted with the NGO. In addition, some NGOs stated that they used behavior-change strategies, but on closer examination, these were found to be simple health communication interventions without clearly defined target behaviors for the prevention of diarrheal disease. Of the 13 NGOs, four stated that they sought changes in knowledge and handwashing; three sought changes in water quality; and two in latrine use. The NGOs had the greatest capacity in training of promoters and community work and the least in strategy design. All the NGOs were receptive to the training and saw that adding capability in behavior-change skills would not only improve their work under RECON, but would help them in other work as well.

On the basis of the evaluation, the following areas to be addressed were identified:

- Behaviors and ways to promote behavior change
- Key behaviors for preventing diarrhea
- Qualitative-type processes for designing behavior-change strategies
- Community involvement in strategy design.

3.3. The Trainees

By agreement with EHP, participants in the training workshop were to be NGO personnel who dealt with or actually carried out activities in the areas of education, research, or communication. There would be two representatives from each NGO, and they would agree to be in continuous attendance for the entire duration of the workshop. Other trainees came from INAPA, SESPAS, PAHO, World Vision, the Peace Corps, and ENTRENA. There were 38 trainees in total, and 23 trainees attended all training sessions.

3.4. Design of the Workshops

Training was presented in two three-day workshops. Each workshop was followed by a one-week implementation period (see Annex 2 for the content of the workshops).

Activities were scheduled as follows:

Initial scoping	April 2000
Evaluation of NGOs	September 2000
Workshop design and preparation of materials	October 2000
Workshop, Part 1	November 2000
Workshop, Part 2	February–March 2001

3.5. Results of the Workshops

The workshops gave trainees practical experience in strategy design, strategy and concept testing, and materials generation. Their enthusiasm prompted a demand for further assistance in supporting implementation of the planned activities. In response, EHP carried out a pilot program with two of the NGOs that had participated in the workshop, as phase two of the behavior-change effort (see Chapters 4–10 for a description of this effort).

3.6. Lessons Learned

In replicating the behavior-change workshop, the following changes might be made to make the effort more effective:

- *Train staff in behavior-change strategies before projects are launched.* (In the RECON project, an emergency response was called for, and behavior-change strategies were not considered from the outset.) In most situations, allocating the time necessary for training may delay implementation, but it will ultimately pay off in terms of efficiency and final project results.
- *Carefully measure the capacity of participating institutions.* Measurement should go beyond accepting the self-assessment of NGO personnel. For example, individuals may state that they can manage focus groups, but their statements are not based on any uniform standards. Knowledge of the actual level of competency of the groups involved aids in planning a workshop.
- *Three modules (workshops) may be more effective than two to improve the transfer of all the behavior-change techniques.* The three modules should be: 1) research; 2) materials production and testing; and 3) establishment of a baseline,

training of staff in the use of materials, and monitoring. Separation between the modules should be maintained with enough time allocated for trainees to apply what they have learned.

- *Select as trainees only individuals with communications background who will actually be applying the methods in the NGOs projects.* The presence of some trainees with very little experience in communications slowed down the workshops.
- *Allow for the participation of at least two individuals from each NGO in training to increase the likelihood that the methodology will be implemented and institutionalized.* Three from each organization would be ideal.
- *Provide a common fund for activities that could benefit several NGOs simultaneously.* A common fund for formative research, collection of baseline data, materials production, validation, etc., would be cost-effective. In research activities, it is less costly to expand the sample of one research effort than to carry out several small efforts. And in materials production, larger volumes lead to lower unit costs.
- *Ensure that the managers of the NGOs involved understand the scope of the methodology and are willing to provide subsequent support.* It is too often the case that inadequate resources are allocated for communications activities, the money being spent instead on tangible, physical products. In part, this may be due to insufficient knowledge of the methodologies and examples of how they have been successfully applied. NGO communications personnel should be involved or consulted when decisions about budget allocations are made within the NGO.

4. Phase Two: The Hato Mayor Pilot Project Overview

4.1. Background

Following the conclusion of the behavior-change training workshops in Phase One, USAID/Dominican Republic decided to work further with two NGOs to improve their ability to address hygiene behavior change at the household and community levels. CRS and MUDE, the NGOs selected, were to work closely with a local EHP representative and international consultants to implement and document hygiene behavior-change interventions, as part of the RECON effort. The result would be the development and/or adaptation and use of field-tested materials aimed at improving hygiene behaviors and preventing diarrhea, especially in children under five, and the achievement of hygiene behavior change in the Hato Mayor population.

A core team was formed to complete a rigorous formative research project in hygiene behavior change. The team's work culminated in the development, field testing, and implementation of a community-based hygiene behavior-change strategy in nine communities of Hato Mayor.

4.2. The Project Area

The pilot project took place in the municipality of Hato Mayor in the central-eastern section of the Dominican Republic, approximately three hours from the capital city of Santo Domingo. Hato Mayor was selected because the RECON projects had just begun there, and it was not too late to incorporate behavior-change elements. Further, the province represents reality existing at the community level: poverty, weak community organization, and no NGOs working in the area.

Nine communities were selected, as shown in Table 2. All are characterized as poor rural agricultural communities. Though they are geographically dispersed, the communities are culturally and ethnically homogeneous. Residents work for firms that produce fruits and vegetables. They live in fairly isolated communities connected by highways in a state of disrepair. The terrain is semi-mountainous with no access to the sea. There is not enough arable land to meet consumption needs.

In Hato Mayor, community organizations were generally lacking, except for a number of women's groups and associations, parents' associations in local schools, neighborhood boards, and the recently created Association of Rural Water Systems

Committees (Asociacion de Comites de Acueductos Rurales) (ASOCAR), which was charged with maintenance of the water system.

The nine communities had a total of 385 children under age five in a population of about 1,700. Table 1 gives the names of the communities and the number of children in each.

Table 1. The Project Communities

NGO	Community	Children >5
MUDE	La Jaqueta	33
	El Bambu	49
	El Mango Limpio	42
	Kilometro 15	120
CRS	La Mora	24
	Libonoa	23
	El Coco	39
	Los Vasquez	19
	El Mamon	36
	TOTAL	385

When the project was being planned, about 47% of the communities had a water system; those without systems collected water from a nearby river or purchased it from a water truck. Sanitation coverage was abysmally low at about 21%.

Children in Hato Mayor are under-nourished and have a diarrhea prevalence rate higher than the national average (17.9% in rural areas). Baseline studies for the pilot project found a diarrhea prevalence rate of 27% in the two preceding weeks—most affected were males and children under one year. It appears that early introduction of bottle-feeding is a contributing cause of diarrhea, along with the main causes: lack of water and sanitation. However, mortality from dehydration is not equally high, probably because access to health facilities is good.

According to a SESPAS official, community members learned how to prepare and administer oral rehydration salts (ORS) during the anti-cholera campaigns and they still demonstrate the use of these practices.

4.3. Goal and Indicators

The goal of the project is to reduce the prevalence of diarrhea among children under-five. These young children are the most susceptible to diarrhea, and the dehydration it causes is life-threatening for them, especially if they are undernourished. The preventive approach used to achieve the goal was the simultaneous delivery of infrastructure and a hygiene behavior-change program focusing on handwashing,

excreta disposal, and proper handling of drinking water. Ideally, the two types of interventions would create a synergy that would increase impact.

The indicators to be used to measure achievement of the goal were taken from the current Demographic and Health Surveys (DHS) questionnaires:

- Percentage of children under age five with diarrhea during the two preceding weeks, as reported by their parents or principal care takers. Diarrhea is defined as three liquid bowel movements in a 24-hour period.
- Percentage of individuals responsible for caring for children under age five or for preparing their food who demonstrate appropriate handwashing behavior, defined as washing the hands at appropriate times and using the correct techniques.
- Percentage of the population using hygienic facilities for disposal of fecal matter. A hygienic facility is defined as a latrine or toilet in which excreta are not found on the floor or on the seat or walls and where there are no flies present. The facility should be operational and show signs of use. (Disposal of fecal matter is appropriate, by definition, only when homes have latrines or toilets. For this reason, the indicator spells out what constitutes a “hygienic” facility.)

4.4. Overview of Project Activities

The overall approach in the Hato Mayor pilot project was to hire a local communications specialist to work directly with the NGOs, while a U.S.-based hygiene promotion specialist would provide support from the United States and through three visits to the Dominican Republic.

From May 2001 through November 2001, the community consultation process was carried out in a series of stages. Supporting materials for both promoters and the general public were prepared while promoters received appropriate training. Once the baseline study was complete, the program was launched in early December 2001 through a series of events directed toward the general public in each community. Promoters began carrying out their community visits. In May 2002, a cut-off measurement was conducted using the baseline questionnaire, with the incorporation of additional questions related to the work performed by the promoters. An evaluation meeting was held with promoters in the town of Hato Mayor, and all promoters' reports were collected and processed.

Preparatory activities required seven months from the initial stage to the launching of the intervention and involved a total of 74 person days from a team ranging in size from between four to nine individual promoters under the direction of a coordinator from each NGO.

5. The Hato Mayor Project: Research and Selection of Target Behaviors

5.1. Formative Research

Formative research investigated existing behaviors, the constraints or resistance to changing those behaviors that put people at risk for diarrheal disease, and possible motivations for behavior change.

The project team—consisting of the EHP coordinator; representatives from CRS, MUDE, SSID, and INAPA; and two volunteers, from Cooperacion Espanola and the U.S. Peace Corps—carried out the research with assistance from the EHP social marketing consultant. The project team also carried out other preparatory steps: development and testing of strategy and concepts for articulating messages, TIPs, development and testing of materials, creation of a baseline and follow-up assessment, and training of promoters.

5.2. Methodology

Formative research was carried out through direct dialogue with the community. Researchers used various techniques, such as focus groups, direct observation, and in-depth interviews of key informants—primarily community leaders, as shown in Table 2.

Table 2: Research Techniques and Informants

Technique	Informants
Focus groups	<ul style="list-style-type: none">• Fathers and mothers with children under age 5 with access to a latrine.• Fathers and mothers with children who attend school with or without access to a latrine.• Fathers and mothers with children without access to a latrine.• Men with and without access to a latrine.
In-depth interviews	<ul style="list-style-type: none">• Key informants from homes/communities with or without access to latrines.

Technique	Informants
	<ul style="list-style-type: none"> • Key informants from homes/communities without latrines.
Observations	<ul style="list-style-type: none"> • Homes with latrines. • Homes without latrines. • Homes with water. • Homes without water.
Special interviews	<ul style="list-style-type: none"> • Active leaders (three in each community).

In each of the nine communities, there were five focus groups, twelve in-depth interviews, and six observations. Variables considered were the sex of the respondent, presence of water and a latrine, proximity to urban areas, and presence of adequate communication. The differences encountered at the behavioral level were predictable. Therefore, it was felt that all community members should be treated as a single unit, that is, the audience would not be segmented, as is usually the case. Training would concentrate on giving promoters the skills to focus on the most appropriate behaviors for the areas in which they were working.

It was possible to gather a great deal of information about existing practices in Hato Mayor, as all informants offered their complete support. There was a perceived interest in improving the level of hygiene. The greatest obstacle was deemed to be the lack of infrastructure.

5.3. Findings from the Formative Research

The following major findings of the formative research served to guide development of project materials:

- *Poor maintenance and use of water storage containers.* Appropriate behaviors were not observed in the maintenance of water containers and in the way in which water was drawn from the containers. A large cup was usually used to draw water from various kinds of drinking water containers, most without covers. When water was extracted, fingers came in contact with the water. Also, water containers were not kept clean.
- *Inadequate handwashing practices.* People washed in the cup used to draw water from the container or poured water over both hands. Hands were air dried, although women sometimes dried their hands on their aprons. Soap was not always available, and, when it was, it was generally Jabon de cuava, an all-purpose soap or detergent.
- *No handwashing places.* Most homes did not have a place reserved for washing hands. People washed where kitchen utensils were washed.

- *Latrines.* All households according to the baseline survey had some form of an improved sanitation facility. Less than 5% of household members defecated in the fields. Existing latrines were all in use and were shared with neighbors. Latrines were cleaned with Clorox, which is highly regarded as a disinfectant.
- *Use of disposable diapers.* Despite the poverty of most households, residents made widespread use of disposable diapers. In some cases they were washed and reused. They were generally disposed of through burial in the field or burning.
- *No garbage collection.* There was no garbage collection service, and some households were in the habit of burning their trash. Burning of disposable diapers was discussed, but it was the project team’s decision that it would be better to dispose of these items in the latrine, as their volume would not create a problem any greater than that created by other solutions.
- *Poor economic conditions.* One of the most significant obstacles to a more hygienic use of water is the poor economic situation of the families, who depend on sporadic work from agricultural farms.

5.4. Target Behaviors

Formative research conducted in each community revealed common elements that were used to decide which behaviors should be targeted. However, as discussed below, the final decision on target behaviors was made on the basis of trials of improved practices (TIPs). If the TIP for a behavior showed a positive trend toward adoption, the behavior was included. Those that did not exhibit a positive trend were excluded.

The supposition was that, if the selected behaviors were successfully adopted by the communities, diarrheal disease prevalence would decrease significantly. The goal was to achieve 65%–70% adoption of each behavior, so that a critical mass of the population would be using the correct behaviors. At that level, the behavior change would be considered sustainable.

Seven macro behavior changes were selected, and each had supporting micro behaviors. There were a total of 42 micro-behaviors supporting the seven macro-behaviors. For example, the macro-behavior related to “drinking water is kept uncontaminated” is supported by six micro-behaviors.

The following are the macro-behaviors and the supporting micro-behaviors:

- *Drinking water is kept uncontaminated* (1), is drawn from its container without being contaminated (2), and is kept protected (covered) (3). Alternatively, a container with a built-in tap is used (4). The container is washed every three days (5) with detergent and a soft cloth (6).

- *Beginning at age three, every boy and girl is taught to use the latrine (7), with training provided by his or her parents (8). Parents train the children to use the latrine correctly and accompany them at all times until they feel secure (9).*
- *All household members, except children under three years of age, use the latrine, day and night (10). A lantern is made available, and the path to the latrine is kept clean and dry (11).*
- *Children under age three use a potty (12), and the mother disposes of the fecal matter in the latrine (13) and correctly washes the potty (14). The mother teaches the child to let her know when he or she needs to go to the bathroom (15) and to use the potty for that purpose. The mother cleanses the child (16) using toilet paper (17).*
- *All household members wash their hands in the wash basin (18), using soap (19) and water, and dry them (20) with a clean cloth (21) at two critical junctures. The two critical junctures are after defecating or using the latrine (22) and before eating (23). Mothers and fathers make sure that their children wash their hands or help them to do so (24).*
- *Mothers wash their hands (25) with soap and water (26) after cleansing the baby (27), after changing the baby's diaper (28) and before preparing (29) or serving food (30). Mothers wash their hands with soap and water in the wash basin (31) and dry them with a clean cloth (32). Mothers dispose of disposable diapers in the latrine (33).*
- *Households are equipped with a sink or wash basin (34). The sink has a jar or gallon jug containing clean water (35), a basin (36), soap in a soap dish (37), and a towel or clean cloth hanging on a hook (38).*

Additional micro-behaviors had to do with latrine maintenance: Keeping the latrine path clean (39), cleaning the latrine with detergent (40) weekly (41), and for compost latrines, adding lime periodically (42).

Approximately ninety households in the project area were provided with dry compost latrines; however, the formative research did not cover use of such latrines. The behaviors involved in using the dry compost latrines correctly were identified *a priori*. All household members use the dry compost latrine in the following manner: they use the small compartment for urination only and the large rear compartment for defecation; they refrain from using the latrine for disposing of Pampers or foreign objects; they toss in a shovelful of lime periodically; they use a stick to level off the excreta every week; and they keep the door shut at all times. Note that all maintenance issues were not included: for example, sealing the first compartment and changing to the second. Also, lime was not accessible to community members.

Some other behaviors were considered but not included in the final list. Water purification was not included because research indicated that drinking water disinfection had reached a rate close to 78%. Community members made a distinction between water for use in washing utensils and water used for drinking, with the latter receiving treatment.

5.5. Probative Research

Community members exhibited good will and openness to the behavior-change project. However, not all proposed behaviors could be tested due to limitations in water and sanitation infrastructure.

Trials of Improved Practices (TIPs) are a key tool of probative research. Volunteer families agree to try out a specific behavior for a certain time. After about two weeks, the family is visited to see how the trial is going. If the behavior is being practiced, the family might simply be encouraged to continue, but if there are problems, additional counseling is given. After a few more weeks, a final visit is made to ascertain to what extent the behavior has been adopted. Also, the family is given an opportunity to discuss problems encountered in practicing the behavior. These TIPs predict which behaviors are likely to be adopted and which are not.

In Hato Mayor, TIPs were carried out for all target behaviors. Many results were positive, although some behaviors were more easily adopted than others. The TIPs also showed that many behaviors could not be adopted easily unless certain products were available. The initial assessment showed that this promotional activity had not yet been successfully implanted because of problems involving budget and community organization.

TIPs showed that people did not accept the idea of using a ladle or a specific utensil to draw drinking water. For this reason, a decision was made to promote the procurement and distribution of water storage containers equipped with taps.

6. The Hato Mayor Project: Materials Generation and Testing

6.1. Generic Versus Tailor-made Materials

Generic-type communication materials are often used owing to budget constraints. However, research is demonstrating that tailor-made materials are more effective. A practical compromise is to adopt generic materials through a process with the community.

6.2. Generating Materials with the Community

In Hato Mayor, community participation in the process of materials development was spontaneous and enriching. With regard to graphic materials, it was observed (consistent with research carried out in similar contexts) that community residents understand and prefer illustrations that are extremely detailed, contain no text, are realistic, and present “things they way they should be,” as opposed to the way they actually are. For example, latrines were represented, not as they existed in the community, but as ideal structures. The illustration became the model for replication. The conclusion reached was that the people who design water tanks, latrines, and outhouse structures should devote more time to community dialogue, with a view toward seeking better standards of comfort and design.

The community process was not limited to production of illustrations but also covered possible topics for radio drama and puppet theatre. The target population has a high regard for interesting stories, and they even suggested plot lines, settings, and names for characters. People also appreciate lively popular music with witty lyrics. Audio-taped dramas were developed, but time and budget constraints made it impossible to develop a line of popular theatre art.

6.3. Graphic Products

Two types of graphic products were developed: those intended for use by promoters and those aimed at mothers.

Products for promoters were designed to aid them in interacting with household members:

- *Counseling cards*: eight different cards depicting ideal behaviors, picturing typical local characters and settings.
- *Promoter's Handbook*: a notebook-sized pamphlet with easy-to-read text profusely illustrated covering the use of the counseling cards—questions to be asked and steps to be taken.
- *Data recording sheets*: simple forms on which to record visits and to note behaviors being promoted.

Products for mothers consisted of reminders:

- *Poster showing bacterial transmission*: a large educational poster depicting the areas where contact with feces can take place and showing how fecal matter can contaminate food and people's hands. It is intended to be posted in the home.
- *VIP latrine reminder*: a graphic depiction, by means of a circular image, of the sequential actions that should take place to use and maintain the latrine properly.
- *Dry compost latrine reminder*: a variant of the VIP reminder. (This reminder was not part of the original strategy, but when it was found that there were 110 dry-compost latrines in the project area, the variant reminder was added.)
- *Water-storage container washing reminder*: an adhesive label graphically depicting the proper care and washing of the water container, particularly for the type of containers with tap and cover promoted by the project.

6.4. Audio Tapes

Five dramatized stories aimed at adults 18 to 45 (with the primary focus on mothers with children under five) were taped. The characters were suggested by the target audience; the setting was a campesino (rural rather peasant) community; the language was that used by campesinos. The tapes are not sequential but may be listened to individually. The educational topics are intimately linked to the story line to encourage people to put the message transmitted into practice.

The tapes communicated the following messages:

- The fecal matter of all persons, even children, no matter how small the amount, contains active but invisible microbes. The way to get rid of these invisible enemies is by washing one's hands with soap and water.

- Diarrhea in children is caused by microbes from fecal matter transmitted by family members or relatives whose hands have not been washed properly.
- A community that wishes to remain healthy knows that, nowadays, water, regardless of whether it comes from a natural spring, a stream, a well, or a rainwater catchment system, must not be drunk until it is purified.
- A family that wishes to remain free from diarrhea has a latrine that it maintains constantly. If all members of the household perform their bodily functions solely in a latrine, they eliminate one of the primary causes of diarrhea
- Many families have come to understand that, by performing simple actions, such as using a latrine and always washing their hands after using the latrine, they can save considerable amounts of money.

Promoters used these taped dramas to initiate a dialogue on proposed behavior changes.

6.5. Equipment Provided

Each promoter was provided with the following equipment to facilitate work in the communities:

- A battery-operated portable tape recorder that can be heard by a group of three or four individuals nearby.
- A backpack for carrying graphic materials and the tape recorder.
- A photographic identity card (these were the source of considerable pride among the promoters).

Community members were provided with subsidized access to water containers, toilet paper, soap, and other products to facilitate adoption of the selected behaviors (see Chapter 8 for more information on these subsidies).

6.6. Testing of Materials

Not only did the project team take considerable care to generate materials in collaboration with the community, they also put forward a similar effort to test them with the community. The purpose of the tests was to avoid confusing or incorrect messages or messages that were inconsistent with SESPAS guidelines. The community made suggestions with regard to the positions assumed by individuals in drawings, the use of particular colors, and items missing from some scenes. The final appearance of the graphics, including the expressions of happiness on the faces of the individuals pictured, was felt to be quite pleasing and accurate.

Social marketing is interested in measuring the audience response to any proposed action. There are many models of message testing; the one used in Hato Mayor was a quantitative measure of audience reaction to the sampling of materials according to four variables: understandability, attractiveness, acceptability, and the extent of audience identification. The audience was asked to state whether or not the message possessed the indicated attribute. A critical mass in social marketing is the percentage of persons in a community that adopt an innovation (or make a change) that must be reached for other community members to feel social pressure to adopt the innovation. This methodology uses 70% acceptance as the critical mass. Averages are computed for each variable and then for all four to see if they reach the desired percentage. If one variable is below 70%, the message is still considered effective if the average of the four is 70% or above. Table 3 gives the results of the tests. Note that all materials reached 70%, except for the water-storage tank reminder, which reached 69%.

Table 3: Approval Tests of Materials and Audio-Taped Dramas

Graphic/ Drama	attractiveness %	understandability %	acceptability %	identification %	average %
Card 1	89	82	88	56	79
Card 2	84	77	96	50	77
Card 4	71	91	93	44	75
Card 5	64	73	89	66	73
Poster	79	73	67	64	71
Latrine reminder	84	75	89	47	74
Water storage container reminder	71	70	89	44	69
Audio drama #1	94	80	89	71	84
Audio drama #2	95	91	94	65	86
Audio drama #3	96	95	100	74	91
Audio drama #4	89	83	89	72	83

Tests using this model have proven to have a great impact. The model also has the advantage of permitting the project team to identify the shortcomings of materials so that improvements may be made. Through cross-tabulation of data, it is possible to find out if level of education, age, sex, or occupation are influencing the way people rate the materials.

7. The Hato Mayor Project: Baseline Survey

7.1. Baseline Survey

Following the formative research, materials generation and testing, an initial baseline measurement was carried out the first week of December 2001, aimed strictly at measuring the behaviors that were to be promoted. Baseline data were to be used to determine progress as the strategy was implemented and to identify problems.

The study sample consisted of selected households with children under the age of five. The sample was designed using a weighted-quota, to ensure participation from all project communities. A total of 109 households were selected for the baseline survey, and 165 children were included in the baseline sample. A survey consisting of 60 questions and 18 structured observations (using a checklist) was conducted.

Respondents (mothers or other child caretakers—usually grandmothers), were asked to respond to a number of questions and to demonstrate washing their hands. In addition, water storage and latrine structure and cleanliness were observed. A supplemental questionnaire was developed and applied to households with elevated-composting latrines. The supplemental questionnaire consisted of 11 questions relating exclusively to elevated-composting latrines. Both instruments were field tested in two communities similar to those in Hato Mayor.

Information was collected on the following:

- *Socio-demographic*: household composition, school facilities, presence and type of community organization
- *Drinking water*: observed storage, drinking vessel, washing practices
- *Handwashing*: critical times (primary caregiver and child), facilities, peripherals (soap, towel, and water), observed skills (use of soap, rubbing hands together, and use of towel).
- *Latrine use*: length of time family had a private latrine, sharing of latrine, observed structure and cleanliness, latrine use, knowledge of proper maintenance.
- *Water sustainability*: access, participation, payment.

- *Diarrheal disease*: reported diarrhea prevalence in children under five in the last two weeks, identification of children and caregivers.
- *Community action*: participation in construction of latrines and water systems, membership in community-action groups.

Questions on handwashing and latrine use were especially important. Questions on handwashing covered critical times (after defecation, after cleansing a child, before preparing food, before eating, before feeding a child, including breastfeeding) and critical techniques (washing with water, using soap or ashes, scrubbing at least three times, and drying in a hygienic manner—with a clean cloth or air drying). Questions on latrines sought to determine who used the latrine. How many individuals used the latrine by themselves? Did they use it at night? How many children used a potty? Was there a place where children’s excreta and disposable diapers were disposed of? In addition, the latrines were inspected to see if they showed signs of use and to determine their state of cleanliness (absence of excreta outside the latrine or in the surrounding area or on the floor, seat, or walls of the latrine, and a low level of flies). Inspections looked to see if there was a path leading to the latrine, if the latrine had a door, and what type of lighting was used. If items were stored in the latrine, that might indicate that it wasn’t being used for its designed purpose. (The selection and description of indicators was taken from *Water and Sanitation Indicators. Measurement Guide* by Patricia Billig, Diane Bendahmane, and Anne Swindale. Food and Nutrition Technical Assistance Project — FANTA.)

7.2. Survey Findings

7.2.1. Percentage of children with diarrhea by age

- There were 165 children under- five in the 109 households surveyed; 45 children (or 27%) had had diarrhea in the past two weeks, according to their parents’ or caregivers’ recollection (Table 4).

Table 4. Percentage of children with diarrhea by age

Age	Baseline		
	N	Diarrhea cases	%
Under 1	8	2	25
1 year	42	19	45
2 years	31	11	35
3 years	32	9	28
4 years	24	2	8
5 years	28	2	7
Total	165	45	27

7.2.2. Reported handwashing behaviors of primary caregivers

- With the exception of handwashing after defecating (54%), the majority did not wash their hands at other critical times. For example, only 14% of caregivers washed their hands after cleansing a child who had defecated, and only 12% washed hands before feeding a child (Table 5).

Table 5. Reported handwashing behaviors for primary caregiver

Critical moments	Baseline N=109	
	N	%
After going to bathroom	59	54
Before food preparation	52	48
Before eating	36	33
After cleaning child (following defecation)	15	14
Before child feeding (including breastfeeding)	13	12

7.2.3. Reported handwashing of youngest child

- Handwashing of the youngest child was not generally practiced. Fifteen percent reported washing their child's hands after defecation and 33% before the child ate (Table 6).

Table 6. Reported handwashing of youngest child

Critical moments	Baseline N=109	
	N	%
After going to bathroom	16	15
Before eating	36	33
When bathing	39	36
Before breastfeeding	4	4

7.2.4. Handwashing techniques

- Indicators for proper handwashing techniques were generally higher than for correct times: 59% demonstrated the use of soap; 47% rubbed their hands together at least three times; related to hand drying, only 13% demonstrated use of a towel, and 48% dried their hands on their clothes (Tables 7, 8 and 9).

Table 7. Presence and use of soap

Presence of soap	Baseline N=109	
	N	%
Detergent	32	29
Soap	16	15
Other	2	2
None	44	40
Unknown	15	14
Use of soap	N=104	
Yes	61	59
No	44	42
Unknown	4	4

Table 8. Observed handwashing technique

Handwashing technique	Baseline N=104	
	N	%
Rub hands together once	8	7
Rub hands together twice	41	38
Rub hands together 3 times	35	32
Rub hands together 3+	16	15
Did not rub hands together	4	4

Table 9. Observed method of hand-drying

Method	Baseline N=104	
	N	%
Towel	14	13
Other cloth	1	1
Air dry	6	6
Clothes	50	48
Other	0	0
Unknown	33	32

7.2.5. Excreta disposal

- Sanitation coverage was near universal: 94% of the surveyed households had a toilet, VIP latrine, or dry-composting latrine; however, 50% had had the facilities less than a month (Table 10).

Table 10. Excreta disposal at baseline

	Baseline N=109	
	N	%
Toilet with septic tank	11	10
VIP	82	75
Elevated composting	10	9
Open field	4	4
Other/Unknown	2	2

7.2.6. Disposal of children's excreta

Among households with children using diapers, 39% reported disposal of excreta in the open field. Among children using potties, 90% reported excreta disposal in the latrine (Table 11).

Table 11. Disposal of excreta for children using diapers and potties

Disposal of excreta for children using diapers	Baseline N=18	
	N	%
Latrine	5	28
Hole in the ground	1	6
Open field	7	39
Rinsed out with water	5	28
Other	0	0
Disposal of excreta for children using potties	N=49	
Latrine	44	90
Hold in the ground	2	4
Open field	1	2
Other	2	4

7.2.7. Primary water source

- Thirty-four percent of the households reported having access to a community water system. all of these lived in communities where the RECON project had completed the water system.

8. The Hato Mayor Project: Training, Launching, and Monitoring

8.1. Training

Promoters to be trained were selected with the active participation of the community, based on the profiles prepared. Twenty-three promoters were selected and received training. (Two withdrew after moving from the community and one retired; 18 responded to the evaluation.)

Training took place in a designated locale to which the promoters traveled from their communities. Training activities succeeded in deepening team spirit and motivation and were positive and enjoyable.

The basic subject matter consisted of an introduction to health, with an emphasis on the effects of fecal-oral contamination. Subsequently, participants were given an explanation of the supporting materials and how to use them, followed by the basic elements of interpersonal communication and intensive exercises in counseling and the use of negotiating skills, important aspects of behavior-change techniques.

8.2. Launching

The final step in the preparatory stage was the launch of the program in the communities. The launch sparks community interest and facilitates promotional activities. The launch also served to introduce and legitimize the promoters. In each of the nine communities, the activity was launched with a special program that included the presentation of training course diplomas and materials to promoters. Community participation was enlisted through drawing and song contests and a small fiesta. To the extent possible, central-level authorities from a number of organizations attended.

The community-level hygiene intervention focused on the promotion of seven macro behaviors, encompassing 42 micro-behaviors (see Section 6.3). The macro-behaviors were:

- Maintenance of an uncontaminated drinking water supply

- Latrine use for children over three years of age
- Latrine use by all family members
- Use of potties for children under three followed by appropriate disposal of feces in the latrine
- Handwashing at critical times and with critical techniques for all household members
- Handwashing at critical times especially for mothers
- Promotion of a permanent place for handwashing.

The project did not rely exclusively on communication, but also promoted the use of certain products that had been identified in the formative research, as follows:

- *Water containers with taps.* Formative research revealed that household members did not know where to acquire a safe water storage container, although they were willing and able to buy one. The solution was to offer storage containers for sale on installment. EHP provided the NGOs with the containers, and promoters acted as intermediaries, delivering the containers and collecting the payments. The containers were exhibited when the project was launched and were depicted on the counseling cards. The price was 80 pesos (about US\$6.00) to be paid in three installments. Approximately 80 containers were sold. The proceeds were given to the water committees to be used for water or sanitation improvements. Although the subsidy program was too short to have much of an impact, during the five-month cut-off monitoring, well-maintained containers were seen in many houses.

Other products that were promoted were sinks or appropriate tables with wash basins, potties, garbage containers with covers, detergent for scrubbing the water storage container, and lime for latrines. Community members were constrained in their ability to obtain these products because of lack of money.

8.3. Monitoring

The backbone of the project was monthly house-to-house visits by community hygiene promoters trained in counseling techniques and armed with materials that they themselves had developed. They distributed their own materials, products, and services and reported their activities on simple visit forms. Their purpose was to get community members to make an agreement to adopt certain behaviors. On follow-up visits, the promoters would see how the community members were doing: if there were problems, the agreement would be re-negotiated, perhaps with an attempt to address problems or constraints that people encountered. NGO coordinators provided support.

8.4. Recommendations for Follow-Up

At the completion of the assessment survey, several follow-up activities were recommended:

- Promoters should continue to make follow-up visits to households.
- Monthly visits to promoters by NGOs should be continued to provide support and encouragement.
- A second follow-up assessment should be conducted to highlight progress and problems and make changes when needed (Measurements should be viewed not as end products but rather as instruments to confirm that progress is being made toward the GOA).
- A reinforcement workshop for promoters should be held, based on the results of the five-month assessment. Areas needing improvement are counseling skills and data recording.

9. The Hato Mayor Project: Mid-term Survey

9.1. The Mid-term Survey

Five months after implementation of hygiene promotion activities, a mid-term survey was conducted in the second week of May 2002 to monitor progress. Both the baseline survey and the mid-term survey were part of the community participation process since the institutional team that initiated and implemented the water, sanitation and hygiene activities participated in the monitoring process (see EHP Activity Report 120. Combining Hygiene Behavior Change with Water and Sanitation: Monitoring Progress in Hato Mayor, Dominican Republic, for detailed information).

Additional surveys are planned for 2003 and 2004 to monitor trends and sustainability of the observed changes after one and two years of program interventions.

The mid-term assessment was essentially the same as the baseline assessment. A few changes were made to improve the instrument's validity, collect additional information, and eliminate questions deemed not to be useful.

- A section on contact and interaction with the community health promoter was added to the mid-term survey: themes discussed, number of visits, commitment to make a behavior change, receptivity to visits.
- In the baseline survey, the interviewer asked at what times the caregiver washed her hands two times, and in the mid-term survey, this question was asked only once.
- A supplemental questionnaire was developed and applied to households with an elevated composting latrine.

The sample size of the mid-term survey was 125 households (16 were additional from the baseline to capture behaviors in households with elevated—composting latrine), and 209 children were included.

The data from the two surveys were entered, processed, and analyzed using EPI-INFO, Version 6.4. The results, which are presented in Sections 9.3 and 9.4, must be viewed in light of the limitations of the study design, as summarized in Section 9.2.

9.2. Study Limitations

The purpose of the mid-term survey was to provide timely and useful information for program managers and communities and as feedback for the volunteer Community Hygiene Promoters to motivate their continued work by demonstrating their accomplishments, rather than a scientifically rigorous program evaluation for research purposes. It is therefore important in reviewing the results of the assessment to keep in mind its limitations.

Perhaps the most important limitation is that no pre-hardware baseline was established. Therefore, it was not possible to measure the impact of water and sanitation interventions independent from the impact of hygiene behavior-change activities. Also, changes made in the questionnaire could compromise the validity and reliability of the study.

Other limitations have to do with how the study was designed. Given the constraints of time and resources, the study had to take a number of short-cuts, all of which jeopardized to some extent the results:

- The sample was selected using a quota-convenience methodology. There was no randomization. Therefore, findings cannot be generalized beyond the households interviewed.
- There was no control group (non-intervention group) with which to compare the observed changes. The baseline data was used as a surrogate control.
- Although the majority of the households at baseline were included in the mid-term evaluation, no coding system was used to enable linking of the surveys by household. Such a coding system would have permitted a comparison of changes in diarrhea prevalence by household with and without water at baseline.

9.3. Findings¹

9.3.1. Diarrhea prevalence

The desired health effect from water, sanitation, and hygiene behavior-change interventions is a reduction in diarrhea prevalence. At baseline, households were asked about diarrhea prevalence within the past two weeks for all children under five. This question was repeated on the mid-term survey (information on children who turned five after the baseline was collected in order to include the same cohort in both surveys). A decrease in diarrhea prevalence occurred for all age groups, with the largest decrease for children between age one and three. The difference was

¹ See also EHP Activity Report 120. *Combining Hygiene Behavior Change with Water and Sanitation: Monitoring Progress in Hato Mayor, Dominican Republic* for more information)

statistically significant for one and two year olds. The mean diarrhea prevalence for children under five years of age was 27% at baseline and 11% at the mid-term survey, a significant decrease.

Several factors must be taken into account in interpreting these findings:

- The decrease in diarrheal disease prevalence cannot be linked directly or exclusively to the behavior-change interventions. Sanitation coverage was near universal at baseline (92%), water and sanitation infrastructure having been constructed by December when the RECON project ended. Although not all the infrastructure was in use by that time, the decrease in diarrheal disease prevalence may be due to the combined effect of the behavior-change and infrastructure interventions.
- There may be a seasonal fluctuation in diarrheal disease between December (when the baseline assessment was made) and May (the time of the mid-term assessment). It must be noted, however, that seasonal epidemiological data are not available.

9.3.2. Behavior-change

Key results are those related to handwashing and the use of the latrine among the population group: fathers, mothers, or caregivers of children under-five.

- An increase in 12% from the baseline to the mid-term was recorded in handwashing of primary caregiver after defecation, from 54% at baseline to 66% at mid-term, a (borderline) statistically significant increase. However, handwashing at other times did not change significantly from baseline to mid-term.
- Interviewees were asked when they washed the hands of the youngest child in the household. Reported handwashing after the child defecated doubled: from 15% to 31%; handwashing before the child ate increased from 33% to 55%. Both increases are statistically significant.
- A highly significant increase in the presence of a permanent, designated handwashing location was noted: from 33% at baseline to 62% at mid-term. It is assumed that people are more likely to wash their hands if they have such a location.
- Use of soap for handwashing increased. The demonstrated use of soap during handwashing increased from 59% to 79% from baseline to mid-term. During the same period the observed presence of soap increased only 5% (from 45% to 51%). One possible explanation for the discrepancy is that households may store their soap where it is not visible. However, it is assumed that households with soap visible in a handwashing area are more likely to use soap when they are

actually washing their hands (as opposed to demonstrating how they wash their hands).

- Concerning handwashing techniques, at baseline, 47% of the primary caretakers rubbed their hands together three or more times when they demonstrated how they washed their hands. At mid-term, the percentage had increased to 76%. This suggests that handwashing technique improved.
- Hand-drying behaviors also improved. The observed use of a towel increased from 13% to 30%. Air drying became the preferred method: 38% demonstrated this method at mid-term, compared with 6% at baseline. Use of clothing fell from 48% at baseline to 5% at mid-term.
- Cleanliness of sanitation facilities is associated with use. Based on the presence of flies in close vicinity to the sanitation facilities, latrine use increased during the project. Presence of flies decreased from 19% to 6% (a significant decrease). Also, use of sanitation facilities for storage is believed to be associated with non-use for feces disposal. At mid-term, no sanitation facilities were being used for storage, a highly significant decrease from 21 at baseline.

9.3.3. Monitoring and Follow-up by Promoters

Interviewees were asked how many times promoters visited them and what they talked about during their visits. More than half (54%) received three visits or more. The topics most often discussed were:

- Handwashing after using the bathroom
- Latrine cleanliness
- Cleaning water storage containers
- Handwashing after cleansing a child
- Handwashing before eating.

It is notable that the improvements in handwashing after defecation from baseline to mid-term correspond to the most frequently discussed topic. Likewise, reported handwashing of the youngest child after going to the bathroom and before heating significantly increased. Again, this may be associated with the work of the hygiene promoters.

Overall, the findings are suggestive of the effect of the hygiene behavior-change interventions. Several positive changes in hygiene-related behaviors have been documented. Additional qualitative research may help to explain why the increase in

reported handwashing after going to the bathroom was so modest (from 54% to 66%), as well as why there was no reported change in handwashing at other critical times.

9.3.4. Skill Development and Supervision of Promoters

The forms used by promoters were reviewed and tabulated at the time of the mid-term assessment, and the intent was to continue to review them quarterly. The review revealed that some promoters were having difficulty filling out the forms and that the forms as well as the recording techniques were in need of improvement.

Supervisors' visits were not made as often as planned; however, this shortcoming did not negatively affect the promoters, whose determination, dedication, and motivation stood them in good stead. In addition, the tasks that they were being asked to do were feasible, and they were well accepted by the communities.

The mid-term assessment revealed that the promoters had attained a very good understanding of the health message and content that they were responsible for communicating. Five videos were made of promoters making community visits. The promoters demonstrated extremely good interpersonal relationships and were trusted and well-received by community members. However, the negotiating aspect of their counseling needed improvement. They exhibited a tendency to impose rather than negotiate and to decide what should be done before exploring the situation in greater depth with the community members involved.

The following is a sampling of comments by promoters:

- Everyone welcomes us into their homes, and we are often asked to visit homes where there are no children under-five.
- We rarely miss our monthly visits, which take place between 3:00 p.m. and 5:00 p.m.
- Our routine is as follows: 1) friendly greeting; 2) check to see if the child has diarrhea; 3) identify or recall the problem; 4) use the counseling cards; 5) propose improved behavior; 6) negotiate a commitment; and 7) say goodbye and plan the next visit.
- We find the guide to be extremely useful and like wearing the project T-shirt and identification badge.

Their only negative comment concerned materials distribution. Not all promoters received everything, particularly the audio-taped dramas.

The promoters rated the target behaviors as to how much emphasis they gave them. Handwashing was given the greatest emphasis (47%), followed by latrine management (27%), water storage (22%), and children's potty (2%).

The results recorded to date have also led to the development of similar hygiene behavior-change programs in two other countries: Nicaragua and Peru.

9.3.5. Process Results

The mid-term assessment considered how the project was implemented and what effect it had on the organizations involved. The following are the most notable process results:

- New technicians from participating partner organizations received practical training in behavior-change methodology and can train others.
- The technicians also increased their skills in management of focus groups, in-depth interviews, behavior observation, TIPs, qualitative analysis of obstacles, development of strategies to address obstacles, testing of strategies, preparation of materials, creation of a baseline, and organization of a community launching activity.
- Twenty-three promoters were trained and are making household visits on a regular basis.
- Support materials were prepared (promoters' guide, counseling cards, etc.). These educational materials have been assembled by PAHO/Dominican Republic as "Module I" and distributed to other NGOs.

9.3.6. Impact on Institutional Partners

Both phase one and phase two of this project aided in calling attention to the importance of behavior change. This notable achievement will hopefully have an impact in the long run. The individuals exposed to the behavior-change methodology came to realize that seeking merely to improve *knowledge* of hygiene generates poor progress in achievement of public health results. Even those who did not go through the training have obtained, through their involvement in the project, a grasp of the fundamental principles of behavior change.

The activity has prompted local USAID officials to require the inclusion of behavior-change activities in their water and sanitation projects. USAID has initiated an activity whereby a group of the most competent technicians involved in the two phases of this project were sent to Nicaragua as instructors and participants in a similar program. This experience has raised their competence in behavior-change methodology and they have participated in training others on their return.

The project forged a number of institutional partnerships that enriched the approach and will assist in dissemination. These partnerships included that between EHP and PAHO/Dominican Republic. Together they provided support in placing the approach within the C-IMCI framework and financed the inclusion of staff members from

SESPAS and INAPA in project implementation. The involvement of SESPAS, through the staff of the General Directorate for Health Education and Promotion (Dirección General de Promoción y Educación para la Salud) (DIGPRES), signals the ministry's support for the behavior-change methodology, which can be applied in other health projects. Likewise, INAPA, after having observed the potential of the methodology, is interested in training its experts with a view toward expanding the use of behavior change in various community-level activities.

9.4. Follow-up Activities

The results of the mid-term assessment were positive, not only in terms of demonstrated behavior change, but also in terms of skill development of the NGO coordinators and health promoters. Project partners—including INAPA, SESPAS, PAHO, CRS, and MUDE—were committed to utilizing the behavior-change materials and methods in their ongoing work. EHP is supporting a number of activities to extend the work begun in Hato Mayor.

- *Hygiene behavior-change programming guide.* A programming guide for diarrheal disease reduction is being prepared to facilitate replication of the behavior-change approach.
- *Institutionalizing a partnership for behavior-change.* A coordinating mechanism for behavior-change activities will be established. The proposed site for coordination is the ALIANZA NGO network. A local coordinator will manage materials production and dissemination, serve as a focal point for hygiene promotion partners, coordinate and document training activities, and serve as liaison between USAID/Dominican Republic, EHP, and partners in the Dominican Republic. In effect, ALIANZA will institutionalize the existing partnership for hygiene behavior change that has been functioning since the inception of the Hato Mayo project.
- *Additional support for health promoters.* USAID/Dominican Republic and EHP will work with MUDE and CRS to enable them to continue to support their health promoters in Hato Mayor. It is anticipated that an additional evaluation will take place in December 2003.
- *Replication of the approach.* A team of national “multipliers” of the behavior-change methodology will be developed through additional training and technical assistance for MUDE, CRS, INAPA, and World Vision. The team of multipliers will travel to Nicaragua to providing training and support to a new behavior-change project there.
- *Hygiene behavior change in other activities.* A consultant will work with national agencies that have made a commitment to integrate the behavior-change methodology into their work to help them apply and adapt the approach to specific contexts. Each agency will develop a work plan for implementation of

hygiene behavior change in the context of hygiene improvement, nutrition and food security, and other health-promotion activities.

10. The Hato Mayor Project: Conclusions and Lessons Learned

10.1. Conclusions

The conclusions discussed here are based on the first five months of implementation. More experience will indicate whether the following early signs and tendencies are valid. (Additional assessments are planned for 2003 and 2004.)

- Improved infrastructure combined with a well-designed behavior-change program creates a synergy that can produce measurable results in the short-run. Likewise, inter-institutional efforts are essential to sustain effects over the long-term. Agents who participated in the project witnessed its potential and acquired an understanding of behavior change.
- Transfer of skills is enhanced when accompanied by technical assistance in the context of a systematic approach with continuing on-the-job education and feeding lessons from the field into training. Isolated training events are not as effective.
- The behavior-change methodology is relevant not just for the problem of diarrheal disease. This approach was adapted to hygiene after significant successes in nutrition promotion. It can be applied for other health issues as well, particularly vector-borne diseases and acute respiratory infections, which affect children disproportionately.
- Community participation in all stages of the process – initial assessment, strategy development, design of project mechanisms, and materials development—is a key element of the behavior-change methodology. Project interventions should be implemented by community agents who will assume responsibility for the task once they have been trained appropriately and empowered by the community.
- Successful organizations adopt a different *modus operandi* to effectively use behavior-change methodologies as an integral part of their approach to development. They recognize that a substantial period of time (e.g., six months to one year) is needed for individuals to adopt changes, take ownership of those

changes, and remain faithful to them. Also, organizations that successfully implement behavior-change activities are aware that the methodology requires considerable dialogue with the community, to collect information and to report that information back for comment with concrete proposals for actions that must then be tested with the community. Successful implementation also includes data collection and analysis systems that are functional and receive continuous support. Building institutional memory within NGOs contributes to enhancing new interventions and to adapting the methodology for other areas of concern.

10.2. Lessons Learned

Major lessons learned are given below.

- *Behavior change.* Behavior change is greatly facilitated when water/sanitation infrastructure is in place. It may also be a catalyst to create demand and organization for structural improvements in hygiene.
- *Understanding of the methodology.* A clear understanding of all essential elements for a program to change behavior is necessary. For example, if formative research is omitted and only a KAP survey is used instead, it may make it impossible to define constraints or identify culturally appropriate solutions. Often there is a desire to change behavior through the media, omitting the interpersonal relationships and the key processes of proposal and negotiation. Too often there is no coordination between infrastructure and behavior-change projects when both together can have a greater impact than either activity in isolation.
- *Need for balanced team of technicians.* Institutions that successfully implement a behavior-change methodology create a coherent and balanced team of technicians in which all three functions or skills are present: the ability to manage communications; the ability to provide training in interpersonal communication and counseling; and the ability to conduct research, particularly qualitative research and analysis. It is very difficult for a single individual to implement a behavior-change intervention. As a minimum, two persons would be advisable, with three as the ideal.
- *Sufficient funding.* NGOs are often short of funding for new activities, but for the extensive field work required by this model, so that materials can reach 15% to 17% of the population in the area, sufficient funding is a prerequisite. Per capita costs of materials range from US\$7 to US\$9. Fortunately, in Hato Mayor, USAID contributed additional funds to make possible a more adequate package of materials and additional support to the communities. NGOs may want to consider including behavior-change activities in all their grant proposals to donors and foundations.
- *Consultant support vital.* Since this is a new methodology, it is imperative to have the support of a behavior-change consultant, until such capacity is built locally.

Long-distance technical assistance is not as effective. Failure to build local capacity creates gaps between technical assistance visits, and implementation is typically delayed. The ability to build local capacity should be an important criterion when selecting a consultant, besides a good track record in behavior change and communications.

- *Support by supervisors.* supervisors within the organizations who are able to understand the novel characteristics of the methodology and its utility for the organization will provide the support required more easily. Communicating the behavior-change concept to supervisors must be a high priority for project technicians. Success will ultimately depend on whether the behavior-change methodology is understood as intrinsic to the water and sanitation project, not simply as a parallel activity.
- *Community organization.* Community participation experiences with promoters work best in communities that are already organized and can delegate authority to community network agents. If weaknesses are identified, some effort should be devoted to strengthening community organizations.
- *Interaction between water and sanitation and behavior-change technicians.* The results of research carried out in behavior-change programs can be very useful to water and sanitation technicians in the development of user-friendly water and sanitation technology/facilities. Similar to behavior change, the design of water service and latrines should be discussed with the community. Water and sanitation technicians understand that by modifying a design they can be more successful at removing constraints to the adoption of certain health-enhancing behaviors and at contributing to health goals. For example, placing the water tap close to the kitchen or latrine will facilitate handwashing. However, if the individual has to walk 20 meters from the latrine to the tap, he or she is less likely to perform this action.

Annex 1 Behavior-change Approach

- In behavior change, problems are always defined following *qualitative research*. In addition to determining the behaviors related to the issue in question, such research identifies the factors that cause the target audience either to adopt or reject these behaviors, the possible motivating forces, and the characteristics of the audience (experience, resources, forms of communicating, community organizations, etc). *Quantitative* research is not carried out first but comes after qualitative research to develop baseline data exclusively for the target behaviors identified through qualitative research.
- Qualitative research is horizontal and non-impositional, that is, it consists of a dialogue between the project team and community leaders; it is carried out by people from the target community and involves all stakeholders. It focuses more on behavior than on knowledge, analyzing the various elements that contribute to the formation of behaviors: knowledge, cultural factors, access to infrastructure, class, socioeconomic status, education, geography, exposure to mass communication, etc.).
- In behavior change, several specific steps are taken in preparing a strategy or action plan: 1) the results of the research are analyzed and reviewed with the community and the stakeholders; 2) the constraints or obstacles preventing adoption of the target behaviors are prioritized; 3) the strategy is tested with the community, *i.e.*, the strategy *per se* in terms of its feasibility, the target behaviors in terms of their potential for adoption using TIPs, and the motivational resources in terms of their effectiveness.
- In behavior change, communication materials and educational aids are prepared with the specific audience in mind and with the goal of countering the resistance of the target audience or facilitating acceptance. Ideas for the materials are discussed with the communities and an attempt is made to engage local talent in their preparation. Later the materials themselves are tested in the communities. At this juncture, the extent to which the target behaviors are practiced is measured quantitatively to create a baseline for subsequent comparison.
- In behavior change, training of staff focuses on developing practical skills as opposed to learning how to transmit specific concepts or theories. Trainees learn interpersonal communication techniques and counseling; they engage in practical exercises with feedback; and they become familiar with the whole range of communication aids.

- In behavior change, assessment activities must take place during implementation. *Follow-up* ensures that the action plan unfolds optimally: materials have been distributed, the target audience is aware of the materials and activities (mass media announcements, parades, meetings of experts, etc.), promoters are receiving proper support, and the action is launched with a high institutional or public profile. *Monitoring* activities should be based on an understanding that behavior change presupposes a period of time of exposure to communications materials and activities until behavior adoption takes place, if at all. It is essential to detect the tendencies toward adoption during implementation. Measurements should be made periodically, including one at the project midpoint, to adjust the strategy. (In behavior change, monitoring is preferred over evaluation because evaluations are normally carried out when a project is over and cannot be influenced. Evaluation results are of interest mainly for future projects. Because of evaluation's high cost and other practical considerations—projects have exhausted their resources and personnel are involved in other activities—only a small number of evaluations of behavior-change activities have been carried out, thus handicapping efforts to compare behavior change with other strategies.)

The table below compares the way in which development projects are normally carried out with the alternative way presented here and applied in Hato Mayor.

The Behavior-Change Alternative to Typical Project Implementation

Typical Way	Behavior-Change Way
Begins with quantitative research on knowledge, attitudes, and practices (KAP), without identifying the causes or problems preventing improvement.	Begins with qualitative formative research to determine knowledge, resistance, obstacles, and motivations.
Strategy is developed on the basis of technical guidelines and ideal behaviors with no opportunity for the target community to provide input.	Strategy focuses on actions to address the resistance and obstacles detected, and concepts are tested with the community.
Concepts that come to light during the KAP are used.	Concepts are tested based on the motivations revealed in the formative research activity.
It is assumed that the behaviors will be practiced by all members of the target community, as a result of the promotional activity.	The target behaviors are tested as to the feasibility of their adoption, using TIP methodologies.
High quality creative talent and communicators are used, but they work without an adequate understanding of the audience. Aesthetic factors are accorded priority importance.	Graphic and audio concepts are generated by the community, along with characters, icons, and visual contexts, based on the characteristics of the target community.
The initial KAP is used as the baseline.	Baseline data are collected only on the behaviors that are to be promoted.

Typical Way	Behavior-Change Way
The launch plan is highly institutional and adapted to highly visible political expediencies.	The launch plan takes into account community norms and celebrations, and a “greenhouse” of supporting publicity is created to aid and protect the development process.
Follow-up is conducted from the common supervisory areas, occasionally using special instruments.	A follow-up plan is prepared at key points during the implementation process in order to ensure that all of the steps involved in the strategy are followed.
Promoters are often not trained in the use of communications materials, or training may be left to local initiative.	Considerable emphasis is given to the practical training of promoters in interpersonal communications and counseling.
Monitoring may not be included because of lack of resources or because it is not considered important.	A monitoring plan is prepared on the basis of the behaviors and weaknesses that have already been detected during the testing of behaviors.
Preference is for a post-project evaluation conducted by an external group. The effort is costly and looks backward to past activities rather than forward to improving the process.	At a predetermined cut-off date, progress recorded is compared with the baseline and problems preventing improvement are analyzed. Results are used to improve implementation, and, although they do not reveal impact, they do indicate trends.

Emphasis on Communication

Hygiene improvement and other types of development efforts look for changes in *knowledge, attitudes, and practices* (KAP). Bringing about changes in knowledge is the simplest, and consequently, such efforts yield the greatest results. Similarly, many positive results have been achieved by focusing on attitudes, particularly on cultural issues and participation by community leaders. But changes in knowledge and attitudes do not necessarily lead to changes in practices. Even when changes in knowledge and attitudes have been documented, often no change whatever in practices is produced.

Many studies have sought to explain why this is so. Based on their findings, the training workshop focused heavily on the communication component. People, even though they wish to do something that they know they should do, fail to carry through with their own wishes because they are influenced or prevented by obstacles. Many obstacles arise from physical deficiencies: a lack or deterioration of commodities or services. A more important obstacle, however, is personal resistance based on distrust, disbelief, lack of self-confidence, cultural rejection or devaluation, suspicion,

fear of innovation, group pressure in the opposite direction, lack of access to decision-makers, etc.

Treatment of resistance must be personalized, as there are a wide variety of causes and considerable options for countering resistance. Community workers must attain a high level of interpersonal skills for reaching out to people, gaining their confidence, and finding out through dialogue what their problems are. These workers also need to be skillful negotiators to work as a part of the health team in a community to spearhead the behavior-change strategy. Other domains of communication, in addition to interpersonal skills, are the use of graphic representations (icons and illustrations), of recall mechanisms, and of mass communication in a supporting role (creating a “greenhouse” in which other communications activities can be successfully cultivated).

Other aspects of social marketing should not be ignored in favor of communication. These include proper product management, proper positioning of the product, and a serious effort to lower the social and economic costs of change to the user.

Annex 2 Content of Workshops

The workshops aimed to give trainees an understanding of the importance of behavior change and to show them how they could include behavior-change activities in their projects, thus bringing about a positive impact on health.

The workshops covered the following topics:

Part 1:

- Behavior-change methodology
- How behaviors are established and influenced
- Key behaviors for preventing diarrhea
- Creation of behavior-change strategies
- Testing concepts; strategies and behaviors; TIPs.

Part 2:

- Creating educational materials with the community
- Organizing other activities with the community
- Field testing materials
- Using materials; interpersonal communication
- Follow up, monitoring, and evaluation.

For the working sessions, illustrated PowerPoint slides were used to present key concepts. The entire group and various subgroups completed practical exercises and discussed their results, capturing the gist of the discussions on “matrices”—templates prepared by the project team for trainees to capture the content of presentations and discussions. At the conclusion of the workshops, the matrices from these activities were bound together as a 90-page, two-volume text for each participant to take home.

- Each subgroup prepared matrices on the following topics:
- Target behaviors, target audience, resistance, and obstacles to adopting behaviors
- Actions to counter the resistance and obstacles

- First action: Communication
- Second action: Community actions
- Third action: Product or service
- Fourth action: In-service training
- Application of the four actions
- Strategy for the group's project
- Work plan and budget
- Plan for testing the strategy and concepts, with the appropriate instruments
- Plan for gathering baseline data, with the appropriate instruments
- Plan for TIPs, with the appropriate instruments
- Plan for generating materials, with the appropriate instruments
- Graphics based on the desires and level of understanding of the audience
- Plan for monitoring and follow up.

The workshop was a dynamic process characterized by intensive work and innovative motivational techniques. Trainees worked an average of ten hours per day and were involved to the extent possible in leading specific exercises. Background music was played during the sessions to help create a relaxed environment, with a repertoire of selected instrumental music. Computers were available for each group. Computerized templates for the various matrices were prepared to ensure uniformity and consistency. Each subgroup's work was presented to and discussed by the wider group, with the facilitators highlighting special achievements or items needing improvement.

The workshop was envisioned not just as a way to improve the ongoing RECON projects of the NGOs, but mainly to increase the capacity of their technical staffs to apply behavior-change techniques in subsequent activities. The approach used in the workshop was designed to meet that goal. As such, it was not overly directive and was based on strengthening and refining techniques already being used and on giving trainees a theoretical framework or philosophy to guide baseline data collection, developing communication materials, monitoring activities, and training.