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COUNTRY PROGRAM BRIEF

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NEPAL

PROMOTING HOUSEHOLD WATER TREATMENT AND HYGIENE

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Women from Parsa village participate in an orientation on safe water handling and hand washing practices.

Significant advances have been made in access to water supply in Nepal in the past two decades, yet the quality of drinking water has remained unacceptably low. In collaboration with Nepal's Department of Water Supply and Sewerage, the USAID Hygiene Improvement Project (USAID/HIP) began working with UNICEF in 2006 on a comprehensive approach to improve water quality in four pilot districts in the country with the hopes of taking the approach nationwide. The overall goal of this collaboration, called the Nepal Hygiene Improvement Project (NHIP), was to improve family health, especially among children under age five, by promoting better hygienic practices, including treatment and safe storage of drinking water and hand washing with soap. The project adopted a three pillar approach—access to necessary supplies and equipment; an enabling environment that includes supportive policy and institutional capacity; and promotion, including social mobilization, marketing, and education. The Government of Nepal through the Department of Water Supply and Sewerage and UNICEF served as the implementing bodies of this public-private sector effort, while USAID/HIP provided focused technical assistance.

NEPAL BACKGROUND

Household access to water supply in Nepal increased from 37 percent coverage in 1990 to 82 percent in 2001 (Central Bureau of Statistics, 2001). Despite this marked increase in access, water treatment at the household level is rarely practiced, and little progress has been made in hygiene and sanitation. Reservoirs and tap water register high levels of microbial contamination; centralized water treatment tends to be complicated and difficult for communities to manage effectively; and unhygienic handling and storage of water at the household level provides additional avenues for contamination. Not surprisingly the incidence of diarrhea in the country is high. According to 2001 Nepal Demographic and Health Survey data, approximately 2,200 children under the age of five die each year from this preventable disease. In 2006 the government of Nepal launched a national Drinking Water Quality Standard to address these shortcomings and raise public awareness about the need for safe water.

APPROACH

To guide the planning of NHIP's complex behavior change component and design its program approach, UNICEF conducted a baseline survey of 1,800 households (and 200 change agents) in the four proposed districts with USAID/HIP support. The study revealed that 75 percent of surveyed households assumed their water supply was safe for drinking, though several nationwide studies contradicted this assumption. In fact

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A village drama team demonstrates hand washing in a school compound in Dang District.

high microbiological contamination has been found in all water sources of Nepal, even government-supplied piped water. The prevailing public perception was that if the water looked clear, it was safe water. Improved storage and treatment of drinking water and hand washing with soap have been shown to significantly reduce the incidence and severity of diarrheal disease, and NHIP chose to target these two hygiene practices in its promotion efforts in Panchthar, Parsa, Kapilvastu, and Dang districts. Through an intensive interpersonal and extensive mass media promotion, NHIP aimed to increase public awareness of the benefits of both practices. At the same time, the project sought to increase access to and improve the affordability and quality of household water treatment products and create demand for these products.

CONSUMER PREFERENCE RESEARCH

A consumer product trial was also carried out at the beginning of the project with the goal of identifying consumer preference and practice related to water handling, storage, and treatment. Eighty households randomly selected from the baseline survey agreed to try one water treatment method over time. Followed at various intervals, participants were asked to report on perceived effectiveness, taste, odor, effort, and family reaction to their selected method. Because no one product emerged as the clear favorite, this research led to the project's unique approach of offering choices of four water treatment options to households—locally produced sodium hypochlorite solution (Piyush and WaterGuard), improved boiling, solar disinfection (SODIS), and filters, especially colloidal silver (CS) filters. All the methods effectively removed disease-causing bacteria to an acceptable level, were deemed cost effective based on the socioeconomic status of the target population, and had the potential to be (or already were being) produced in local facilities.

PROJECT ACTIVITIES

NHIP was implemented through the following main channels: capacity building, mass awareness, facilitation of product availability, and advocacy (scale-up). Using a comprehensive approach that started at the district pilot level with the goal of expanding to the national level, the project trained thousands of frontline community workers and volunteers, health personnel, school staff, retailers, and journalists to reach 500,000 households and increase their awareness of safe water treatment options and the importance of hand washing with soap.

Capacity Building

To achieve its goal of reaching every household in project communities, NHIP employed a cascade approach to train cadres of capable change agents to demonstrate and convince households to practice point-of-use (POU) water treatment and hand washing with soap. The project trained master trainers who in turn trained 4,000 female community-level frontline workers/promoters in the project districts and the staff and children's clubs in 200 schools. An additional 5,500 frontline workers in flood prone areas of the country received this training as well. At the community/village level, these trained promoters visited 1,000 households per Village Development Committee to educate households on hand washing and safe water practices. This information was reinforced through community programs and demonstrations—street dramas, cultural programs at local fairs, local clubs/community-based organization programs, and at school clubs.

Equally important was the orientation and advocacy targeted to national, regional, and district-level government, NGOs, and other stakeholders (including many water and sanitation implementation institutions/organizations)

to ensure their involvement, enable them to conduct their own trainings and orient their communities, and lay the groundwork for further scale-up. The district Water Supply and Sanitation Sub-Divisional Office (WSSSDO) conducted orientation meetings for health post staff, retailers, and journalists, which added significantly to the dissemination of key hand washing and water treatment messages. Health post training focused on preventative actions for diarrhea control; retailer training highlighted the distribution network of various POU options and marketing plans; and journalists were familiarized with POU interventions and given general information on the health benefits and availability of products in the districts.

Mass Promotion and Media Campaign

Based on findings from the baseline and product trials, the project developed a communication package that targeted key stakeholder groups—policy level officials and decision makers, frontline workers, school children, and households. Fact sheets summarizing individual technologies were developed for policy level officials and decision makers. Materials to help frontline workers conduct training, orientation, and awareness-building within their communities were more in-depth and included a technical manual and flipcharts. Frontline workers distributed posters of the four water treatment technologies, calendars, brochures, and stickers to households as part of the door-to-door village level promotional campaign. An interactive children's book describing the importance of water and sanitation and key actions to take was developed for school children.

Basic hand washing materials were developed to promote the critical hand washing times and the need to use soap with water. In comparison, the water treatment materials were far more complex. They had to describe how to use four different technologies and the benefits of each, present the information without bias toward a particular one, and at a level of complexity accessible to a low literacy audience. Designed to balance ethnic and geographic consciousness, the materials were rigorously reviewed by a task force of key water and sanitation stakeholders and pretested for clarity and understanding among diverse ethnic groups, which took extensive time and effort.

The mass media campaign included both radio and TV spots with messages of safe water and hand washing practices. Spots were done in Nepali for a national audience (TV and radio) and in the four major regional languages of the NHIP-focused districts on local FM stations. Radio spots appeared to reach a wider audience—an estimated million-plus people—in rural areas. Village level promotion included street dramas that reached an estimated 70,000 villagers, and trained staff from 20 local NGOs reached approximately 180,000 households through door-to-door promotion activities.

Product Availability

No treatment methods other than boiling were readily available in project districts at the start of the pilot. The goal of NHIP was to improve the affordability, accessibility, and in some cases the quality of household drinking water treatment products. The project collaborated with the various producers to improve supply and create demand, providing different types of support depending on what was needed. In the case of the CS filters, local manufacturers learned how to make filters leak proof, more effective at removing bacteria, and less prone to breaking. The project supported both plastic and clay filter producers as they tested the effectiveness of bacterial removal in several batches of improved filters.

Marketing and distribution support was given to producers of hypochlorite solution (Piyush and WaterGuard). The producer of Piyush is now being funded by USAID's N-MARC project to produce and market its product nationally, and project planners also consulted with local producers of WaterGuard to enhance the distribution of its product using local networks and agents and through saving credit groups.

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Trained filter makers produce clay filter vessels at a central facility in Thimi, Kathmandu. NHIP provided support to filter manufacturers to improve the quality, marketing, and distribution of their products.

With sustainability in mind, the project did not provide any products for free, though it purchased supplies for demonstration purposes. Likewise, no direct monetary support was given to producers; instead a comprehensive package of support services was provided to promote products. The goal was to encourage households to continually use and purchase improved, available, and affordable safe water products. The anticipated increase in demand has led to the expansion of the production and distribution of all the promoted water treatment products in project areas. The growing market of POU products includes a new entry, Aquatabs, a chlorine tablet that will be marketed and sold through various community level programs, distribution channels, and mass campaigns.

Advocacy and Scaling Up

Although the project started on a pilot scale with program activities in four districts, POU treatment and hand washing promotion efforts have expanded to the national level and have now reached 25 out of the 75 districts in Nepal through various program vehicles and channels. The project has great potential for scaling up, and various public and private networks are expected to reach all districts within the next few years. Nepal established a National Water Quality Steering Committee to formalize its commitment to addressing nationwide water quality shortcomings, with household water treatment and hygiene improvement as prominent components.

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SODIS, or solar disinfection, was one of the water treatment options recommended for schools participating in NHIP's School POU Promotion activity. Here school child club members and a caretaker put SODIS bottles in the sun in a Parsa District school.

Messages about safe water and hand washing continue to reach the public through a variety of channels. Nepal's Epidemiology and Disease Control Division (EDCD) promotes these approaches to control the outbreak of disease in humanitarian disaster situations; UNICEF will include them in its School Sanitation Hygiene Education program, which will cover 23 districts; and organizations like UN-Habitat, Environment and Public Health Organization (ENPHO), Nepal Family Health Program, Rural Water Supply and Sanitation Fund Development Board, and the Coca-Cola Company are all working to raise awareness of these approaches to hygiene improvement. Humanitarian organizations such as the Red Cross and Rotary International are using NHIP project materials for mass promotion and awareness-raising during cholera outbreaks.

SCHOOL POU

Because students have tremendous potential to be effective change agents (an estimated five family and community members per student could be reached with hand washing and POU messages), schools were viewed as an ideal place to expand POU promotion and installation activities. NHIP began its schools project by researching the effectiveness of high yield water treatment methods and mechanisms for maintaining treatment systems in the school environment. Partners ENPHO and Solutions Consultant conducted the trials of small volume CS filters, modified large CS filters, tank chlorination, large Biosand filters, and SODIS in 12 selected schools in two districts. The study concluded that several of the water treatment options could be used depending on the school environment. High yield CS filters were the most effective because of their collection and filtration capabilities; large Biosand filters worked best for schools having problems with turbidity, iron, and arsenic in addition to microbial contamination; and SODIS was viewed as a viable option that could also be incorporated into the science curriculum.

At the conclusion of the study, guidelines for school POU promotion were developed and subsequently implemented in 200 schools in Nepal; the guidelines were written to support any organization or school interested in independently installing and operating a POU water treatment technology. The entire school safe water promotion package was outsourced to ENPHO when planners concluded that district teams were not equipped to address school safe water issues. Two technicians from WSSSDO and one technician from ENPHO helped

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High-yield colloidal silver filters, like these set up in a Parsa classroom, are an effective water treatment option for school classroom settings, according to results of NHIP's point-of-use school study.

schools conduct assessments of water availability, water quality, the school environment, technology choices, and proposed financial arrangements before identifying the best possible POU option for the school. The team then provided a detailed orientation on operation and maintenance of the provided treatment options. Students and teachers at all 200 schools received an orientation on safe water issues and hand washing, and children's clubs and school management committees were put in charge of day-to-day operations and monitoring of their school's water treatment technologies, with duties varying depending on the type adopted by the school.

CHALLENGES/LESSONS LEARNED

Though NHIP achieved many of its program design objectives, the project faced a number of challenges that stalled or changed elements of its implementation.

NHIP's ambitious agenda of bringing about changes in hygiene and water treatment behaviors in a short period of time from almost no use to consistent and correct use required more extensive investment and human resources than were originally budgeted as well as a plan for targeted results. The project did raise significant awareness about the need to treat drinking water and wash hands with soap among the target population, however, more ongoing and strategic activities will be needed to bring about the sustained level of behavior change envisioned.

The development of communication materials for safe drinking water treatment options was extremely challenging and took longer than anticipated. Choice was an important component of the POU promotion, and materials had to provide concise but correct and equal information about all four technologies so that households could make an informed decision based on advantages, costs, and limitations of each option. Further complicating matters was the need to make materials ethnically and geographically balanced.

Extensive demonstration and review of the approaches and technologies was essential during the trainings to ensure promoters/trainers conveyed the correct messages. Water treatment and hand washing promotion were initiated in two separate phases at the community and household level to avoid overwhelming participants with too much information. In addition, demonstrations of water treatment at the household level required promoters to transport samples of each treatment option, including bulky and fragile equipment, to remote locations. NHIP refined its approach by setting up demonstrations of the vast array of products in community centers and gathering spots. Promoters and trainers were occasionally mistaken for sales agents of products such as Piyush, WaterGuard, or CS filters, rather than promoters of safe water treatment options in general.

While the project successfully created a demand for water treatment products in its promotion areas, producers continued to have difficulty meeting demand in remote locations because of limited human and monetary resources. A market assessment concluded that all producers were in a more or less nascent stage of product marketing and distribution. The project was unable to develop this activity sufficiently to supply target areas with enough products. Chlorination products are only available in a limited number of shops/areas at the district headquarters. PET bottles for SODIS are still not widely available. And ensuring the quality of CS filters at local/district level production sites remains a challenge. A further challenge was the mandate for UNICEF to focus only on rural areas rather than on urban or peri-urban centers, where retailers help promote and supply products to rural areas.

Finally, a few external constraints hindered smooth project implementation. Civil unrest during several periods of the project meant that staff was unable to move from its district headquarters into project areas. Activities surrounding the Constituent Assembly elections disrupted regular project activities

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A local multipurpose shop in Panchthar District sells plastic CS filters. Distributing these and other water tretment options to rural areas continues to be a challenge.

for several months and prevented district government staff from monitoring key activities in the field. Changes in personnel both at the Department of Water Supply and Sewerage and at the district level led to a lack of leadership. The project had to adjust to a change from centralized to district level administration, which shifted the focus away from project implementation, monitoring, and planning at crucial times.

CONCLUSION

Despite these challenges, NHIP and its partners are seeing opportunities for scaling up the project's approach and tangible evidence of the effectiveness of safe water treatment and hand washing promotion, making it likely that these approaches will continue to be implemented even though USAID/HIP's official support to the project concluded at the end of 2008. EDCD, under the Department of Health Services, Ministry of Health, has been intensively involved and will continue capacity building activities. It is hoped that with the formation of the National Subcommittee for Household Water Treatment, more organizations will become involved in supporting the Government of Nepal's efforts to achieve water and hygiene-related Millennium Development Goals. Furthermore, the project's work in connecting water treatment producers with stakeholders and generating demand for their products has improved marketing and distribution capacity and opened the door for new small scale entrepreneurs throughout the country.

Additional publications from the Nepal Hygiene Improvement Project can be found at http://www.hip.watsan.net/page/2474.

END NOTES

[1]Central Bureau of Statistics. (2001) Report on the Situation of Women, Children and Households – Between Census Households Information, Monitoring and Evaluation System. Central Bureau of Statistics, National Planning Commission, Government of Nepal, p. 41.

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