Scaling Up Rural Sanitation and Hygiene

Promoting Handwashing and Sanitation: An Impact Evaluation of Two Large-Scale Campaigns in Rural Tanzania

February 2015

INTRODUCTION

This research brief provides background on the problems of poor sanitation and hygiene in rural Tanzania, an overview of two large-scale campaigns that sought to address these problems, and the key results of a recent evaluation of the impact of these efforts.

Poor sanitation and hygiene are linked to high rates of fecal-borne illnesses, such as diarrhea, and worm infections. These illnesses are especially dangerous for children: by limiting the body’s ability to absorb nutrients, they can lead to malnourishment, stunting, and death. Globally, diarrhea is the second-largest killer of children aged 1–59 months. To prevent diarrheal diseases and their consequences, the Government of Tanzania implemented two concurrent strategies to promote access to proper sanitation and handwashing with soap, with the support of the Scaling Up Rural Sanitation Program and Global Scaling Up Handwashing Project of the World Bank’s Water and Sanitation Program.

KEY FINDINGS

An evaluation of two large-scale campaigns, one focused on sanitation and the other on handwashing, implemented by the Government of Tanzania from 2009–2011, revealed several impacts:

- More than half the households in sanitation program communities built a new latrine, 15 percentage points higher than non-program households.
- The number of households that usually resort to defecating in the open was cut in half.
- The handwashing campaign had limited and mixed results: more people washed their hands before preparing or eating food, but not after contact with feces.
- 16.8 percent of children under age five in control communities had diarrhea in the two weeks prior to the survey, while only 14.7 percent of children in combined handwashing and sanitation program communities had diarrhea.
- Surprisingly, slightly higher levels of anemia, often the result of fecal-borne illness, were detected in an additional 6 percent of children in program communities.

PROBLEM STATEMENT

Poor sanitation and inadequate handwashing are key causes of the high rates of fecal-borne illness in Tanzania, where diarrhea afflicts as many as 14 percent of children under age five. In rural Tanzania, a pre-program baseline survey found 89 percent of households had a pit latrine, but many were in disrepair and lacked a cover to contain feces. Moreover, households without latrines resorted to defecating in fields, bushes, or rivers, and many households with latrines at home occasionally defecated in the open. These problems were compounded by limited access to water, handwashing stations, and soap, and inadequate handwashing behavior at critical times, such as after using the toilet, before preparing food or feeding children, or after cleaning a child’s bottom.

ACTION

To address these critical problems, the Government of Tanzania, with technical support from WSP and key partners, implemented two programs targeting rural households across 10 districts. The programs did not provide sanitation or hygiene hardware subsidies, but worked to influence people’s behavior, change marketplace dynamics, and strengthen the role of local government in service delivery.

---

The Handwashing with Soap (HWWS) program enlisted community members to work as “front-line activators” to educate caregivers with young children about proper handwashing. The program also involved radio commercials, a radio soap opera, printed materials such as posters, and roadshows (Illustration 1).

The Rural Sanitation program used similar demand-creation interventions (Illustration 2) plus Community-Led Total Sanitation (CLTS) to spur household demand to upgrade latrines and stop open defecation. This program trained local masons to build and market latrine sanplats (see Photo 2) to contain feces, and worked with local supply chains to provide materials.

A rigorous evaluation was built into the programs’ design. Across the 10 districts, 181 rural wards were chosen to participate in the evaluation, and these were randomly...
divided into four groups. Villages in one group of wards received the HWWS program, another group received the Rural Sanitation program, and a third group received both programs simultaneously (HWWS+Rural Sanitation). In this third group of wards, the programs were administered separately and were not truly integrated, but rather co-located. A fourth group of wards was composed of “control” communities in order to estimate what would have happened in the absence of any program. All of the figures in this research brief are based on data from surveys conducted as part of the programs’ evaluation, in which approximately 3,600 households in program and control communities were interviewed.

**KEY LESSONS**

The most impressive finding of the impact evaluation was that the Rural Sanitation program spurred households to construct new latrines, as well as better quality ones. More than half of the households in Rural Sanitation program communities built a new latrine during the two-year program, a 32 percent relative increase over control communities. By the end of the program, nearly two-thirds of the households in Rural Sanitation program communities had access to an improved latrine, compared to just half of households in control communities (see Figure 1).

The proportion of households that usually defecate in the open was cut in half, but occasional open defecation remains pervasive. At the end of the program, just 11 percent of households in Rural Sanitation program communities reported “usually” defecating in the open.

---

6 The definition of an improved latrine refers to the standards of the Joint Monitoring Program (JMP) of the World Health Organization and UNICEF. For more information, see http://www.who.int/water_sanitation_health/monitoring/jmp2008/en/index.html.
Figure 1: By the end of the program, nearly two-thirds of the households in Rural Sanitation program communities had access to an improved latrine, compared to just half of households in control communities. Percentage of households with access to an improved latrine reported during the impact evaluation survey.

![Figure 1](image1.png)

50% 65%
Control Sanitation Treatment

Figure 2: The number of households that usually defecate in the open was cut in half, from 23 percent of households in Rural Sanitation program communities to 11 percent in control communities. Percentage of households that reported “usually” defecating in the open during the impact evaluation survey.

![Figure 2](image2.png)

23% 11%
Control Sanitation Treatment

compared to 23 percent of households in control communities (see Figure 2). Forty-five percent of intervention households still sometimes resorted to open defecation, but this was six percentage points lower than control communities.

The HWWS program increased people’s knowledge about handwashing with soap, but this did not translate into significant behavioral changes. Fewer than half of the households reported washing their hands after contact with feces in the previous day, with no difference between program and control communities. Moreover, in an observational study, surveyors watched child caregivers’ morning routines over a three-hour period. They did not observe any differences in handwashing after fecal contact. But, more people washed their hands before handling food (see Figure 3). Children and caregivers’ hands were rated as cleaner, and latrines were more often covered and clean in program communities.

In communities that received both the sanitation and handwashing programs, there was a 12.5 percent reduction in diarrhea symptoms in children under age five (see Figure 4). The reduction was even greater among children aged 0–2. However, neither the Rural Sanitation nor the HWWS program alone was able to reduce the prevalence of diarrhea among children. This suggests that a combination of sanitation and handwashing promotion activities was needed to inspire the behavioral changes that protect children’s health.

Children in combined HWWS+Rural Sanitation communities displayed some unintended negative health outcomes. Children under age five were more likely to have iron-deficiency anemia, a condition that is often linked to fecal-borne illness, in HWWS+Rural Sanitation communities than in control communities (see Figure 5). They also weighed slightly less for their age, a key measure of
medium-term consequences for child growth. But, there were no long-term impacts on child development, as measured by height or head circumference for age. Interestingly, neither of the negative health outcomes was observed in Rural Sanitation- or HWWS-only communities.

WHAT ELSE DO WE NEED TO KNOW

This program evaluation, along with related projects in Peru, Vietnam, Indonesia, and India studied what can be achieved through large-scale rural sanitation and handwashing programs, as opposed to small-scale interventions. The evaluation also compared the impacts of separate and combined sanitation and handwashing campaigns, allowing a unique view into potential synergies between the two types of campaigns.

The results suggest that a large-scale sanitation campaign can be effective in promoting latrine construction and reducing...
open defecation—important intermediate steps toward the end goal of positive health outcomes, especially for children. A large-scale handwashing campaign, on the other hand, can be effective in increasing people’s knowledge about handwashing with soap, but is more difficult to translate into significant behavioral change, a necessary intermediate step for children to stay healthy and grow tall and strong. Future programs could explore how to create handwashing behavior change and how to amplify the intermediate effects of sanitation campaigns.

To move beyond intermediate impacts, future programs could explore how to create significant and unambiguous improvements in children’s health, which was not observed in this evaluation. Because some intermediate impacts were greatest in communities that received both programs, future programs could examine whether integrating, not just co-locating, the handwashing and sanitation activities would create a larger impact.

ACKNOWLEDGEMENTS
The author, Elisabeth Burgess, would like to thank Yolande Coombes, Aidan Coville, Jacqueline Devine, C. Ajith Kumar, Eduardo Perez, Kaposo Boniface Mwambuli, and Emily Rand.

RELATED READING
This article is primarily based on Promoting Handwashing and Sanitation: A Crossover Randomized Experiment in Rural Tanzania, a report by B. Briceño, A. Coville, and S. Martinez.
Promoting Handwashing and Sanitation: An Impact Evaluation Scaling Up Rural Sanitation and Hygiene

About the program
Today, 2.5 billion people live without access to improved sanitation. Of these, 71 percent live in rural communities. To address this challenge, WSP is working with governments and local private sectors to build capacity and strengthen performance monitoring, policy, financing, and other components needed to develop and institutionalize large-scale, sustainable rural sanitation programs. With a focus on building a rigorous evidence base to support replication, WSP combines Community-Led Total Sanitation, behavior change communication, and sanitation marketing to generate sanitation demand and strengthen the supply of sanitation products and services, leading to improved health for people in rural areas. For more information, please visit http://www.wsp.org/scalingupsanitation.

Contact us
For more information please visit www.wsp.org or email the authors at worldbankwater@worldbank.org.

The Water and Sanitation Program is a multi-donor partnership, part of the World Bank Group’s Water Global Practice, supporting poor people in obtaining affordable, safe, and sustainable access to water and sanitation services. WSP’s donors include Australia, Austria, Denmark, Finland, France, the Bill & Melinda Gates Foundation, Luxembourg, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States, and the World Bank.

The findings, interpretations, and conclusions expressed herein are entirely those of the author and should not be attributed to the World Bank or its affiliated organizations, or to members of the Board of Executive Directors of the World Bank or the governments they represent.

© 2015 International Bank for Reconstruction and Development/The World Bank


Additional related reading is available at www.wsp.org/scalingupsanitation:
