

# Chapter 7 Contents

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## 7. Water, Sanitation, and Hygiene

### Abstract

Health and nutrition benefits increase when potable water, environmental sanitation, and hygiene education are part of Title II development programs and households have access to all three. The term WASH refers to these three critical components. Two-thirds of all programs in the FAFSA-2 universe included a WASH activity. Among the 69 programs reviewed for MCHN in the FAFSA-2, 55 percent delivered an integrated package of water and/or sanitation and hygiene interventions. Twelve percent had only a water and/or sanitation component and 23 percent did only hygiene. There were seven MCHN programs with no WASH (10 percent). The WASH review focused on 31 programs in 19 countries that supported sizeable water and sanitation infrastructure. A significant amount of water and sanitation infrastructure was constructed during the FAFSA-2 time frame, e.g., 570 water systems for 228,000 people and 3,277 wells for 98,310 people. On average, 16 programs increased access to an improved water source by 23 percentage points. Most program clients (61 percent) accessed improved drinking water at a shared community site (categorized as Level I services or lower). Level II and higher water and sanitation services consist of household-level pour flush latrines and water connections (versus community level) and are associated with better health outcomes. Twelve programs in LAC delivered Level II services—a level that should be the goal of Title II WASH. A number of Awardees appeared reluctant to do water and sanitation infrastructure for various reasons, including technical complexity, additional technical staff required, and greater effort needed to meet the increased emphasis on quality and sustainability. In programs that did infrastructure, the low level of Title II funding often precluded addressing the needs of all program communities, or providing all three essential WASH components in each community. Village water committees (VWCs) are essential for sustainability; 94 percent of programs organized VWCs for operation, maintenance, and charging fees. Many programs promoted better hygiene and measured change in hygiene practices; 74 percent reported improvements. US\$16.4 million was spent on WASH in FY 2009, approximately 5 percent of the total cost of Title II development programs that year. But less than a third of all Title II development programs did WASH in FY 2009, a lower proportion than earlier in the FAFSA-2 time period. The policy implications of the WASH assessment are provided in Box 7.8 and the conclusion and recommendations are provided in Sections 7.5.1 and 7.5.2.

# 7.1 Introduction

## 7.1.1 Policy and Program Environment

The potential health and nutrition benefits of a Title II food security program are greatly increased when potable water,<sup>239</sup> environmental sanitation, and hygiene education components are included in the program. The term WASH is used throughout this chapter to refer to these three critical components: water, sanitation, and hygiene. The USAID/FFP Strategic Plan recognized WASH interventions as essential to achieving its result of “human capabilities protected and enhanced.” Illustrative WASH activities from the Strategic Plan “to improve health status and contribute to improved household nutrition through improved water and sanitation infrastructure and practices” are shown in Table 7.1. During the FAFSA-2 time frame, USAID/FFP considered water and sanitation one of eight priority technical sectors supported by Title II development programs. See Box 7.1 for the USAID/FFP definition of the water and sanitation technical sector.

Diarrhea, a major determinant of undernutrition, is closely linked with environmental sanitation

<sup>239</sup> “Potable” or “safe” water is defined as drinking water that does not contain harmful bacteria, toxic materials, or chemicals. Water may have problems with taste, odor, color, or mineral content, but still be considered safe.

and hygiene, including access to potable water and excreta disposal facilities and handwashing practices. Rohde (1984) states that “diarrhea is a major contributor to malnutrition through a variety of mechanisms including anorexia, intestinal malabsorption, and social practices depriving the patient of food.” Having access to adequate water and sanitation facilities and practicing good hygiene are of particular importance to vulnerable populations, including pregnant and lactating women and children through two years of age (referred to as the first 1,000 days), especially because of the serious, long-term consequences of inadequate nutrition at this critical stage of growth and development. The association between diarrhea and undernutrition has been confirmed by a number of studies. In referring to this relationship, McJunkin (1982) writes in *Water and Human Health*: “A significant body of evidence supports the positive linkage between sanitary water supply and excreta disposal and long-term improvements in health status. The linkage is supported by long-term observations in both the developed and less developed countries.” Studies by Brown (2003) and Hunter et al. (2010) also confirm the relationship between diarrhea and undernutrition. Illnesses, such as typhoid, schistosomiasis, hepatitis, scabies, bacillary dysentery, and amebiasis, related to acceptable water supply and general household and community sanitation, represent additional risks to adequate growth in children (McJunkin,

**Table 7.1. Illustrative Activities from the 2006–2010 Strategic Plan Related to Sub-IR 2.1, Human Capabilities Protected and Enhanced**

| <i>Illustrative Activities: To improve health status and contribute to improved household nutrition through improved water and sanitation infrastructure and practices</i>   |  |
|--|--|
| <b>Non-Food Assistance</b>   | <b>Food Assistance</b>   |
| <p>The Title II program:</p> <ul style="list-style-type: none"><li>• Provides and/or coordinates the provision of the complementary inputs needed for the successful completion of the water and sanitation infrastructure such as engineering drawings and services and cement and pipes. Also provides or insures the provision of technical assistance and training to enable communities to properly operate and maintain new/rebuilt facilities.</li><li>• Provides people with education and training that encourages them to adopt critical hygiene practice such as handwashing.</li></ul> | <p>The Title II program:</p> <ul style="list-style-type: none"><li>• Provides food through public works programs for repairing and/or building/rebuilding water and sanitation facilities. (These programs can also be viewed as helping increase community assets.)</li></ul> |

Source: This table is taken verbatim from the USAID/FFP Strategic Plan (2005, p. 67).

### Box 7.1. USAID/FFP Definition of its “Water and Sanitation” Technical Sector

“Objectives include improving water and sanitation infrastructure and practices. Activities include: organizational, technical and financial support for water and sanitation services; promotion of practices that protect water supplies from contamination by improper handling of domestic water supplies, household waste and inadequate sanitation; promotion of improved hygiene practices and behavior change; and, provision of technical assistance and training to enable communities to properly operate and maintain the new/rebuilt facilities. Food rations are used to build water and sanitation-related infrastructure.”

Source: USAID/FFP Annual Results Reporting Guidance for FY 2009.

1982). Water- and sanitation-related health risks are especially high in the countries prioritized for Title II development programs during the last 10 years. It is clear that if a food security program is to have an impact on undernutrition, a reduction of diarrhea needs to be an integral part of that program.

The *Water and Sanitation Indicators Measurement Guide*, a FANTA publication (Billig et al., 1999) that established a methodology to measure the impact of WASH interventions, particularly those funded under Title II, states that “[r]aising the quality of drinking water reduces the ingestion of pathogens. With less disease, children can eat and absorb more food, thereby improving their nutritional status.” The document further states, “Improvements in sanitation have been shown consistently to result in better health, as measured by less diarrhea, reductions in parasitic infections, increased child growth, and

lower morbidity and mortality” (p. 6). There are other benefits of increased access to more water (quantity) related to personal and household hygiene and to reducing the time and physical exertion spent obtaining water.

Access to safe water and sanitation is also a specific policy objective of U.S. foreign assistance as a result of the Senator Paul Simon Water for the Poor Act, signed into law on December 1, 2005 (U.S. Department of State, 2009). The Act requires the Secretary of State, in consultation with USAID and other USG agencies, to develop and implement a strategy to provide “affordable and equitable access to safe water and sanitation within the context of sound water resources management in developing countries” (p. 1).

In other words, although some may focus on the expense of including a WASH component in a Title II development program, a more realistic view is that it is very expensive not to include a WASH component in a food security program.

#### 7.1.2 Status of Water and Sanitation in Countries Prior to Title II Programs

The starting point for providing WASH services is quite different from country to country, as seen in Table 7.2, which shows the percent of the population with access to improved drinking water sources in the 19 countries included in the FAFSA-2 WASH universe (UNICEF and WHO, 2010). In 2000, access to improved drinking water ranged from 18 percent in Ethiopia to 84 percent in Guatemala, for example, and, in 2008, it ranged from 26 percent in Ethiopia and Sierra Leone to 90 percent in Guatemala. In fact, access to improved water sources increased in all countries except Sierra Leone over the eight-year period.

These numbers do not tell the complete story, however. When Title II programs assess the status of water and sanitation infrastructure as they move into their new target communities, they are likely to find that the infrastructure in some communities is no longer adequate, even though they had been classified at some point in time as having access to “potable water” or “sanitation facilities.”

**Table 7.2. Trends in Access to Improved Water Sources by Rural Populations in 19 Countries in the FAFSA-2 WASH Universe between 2000 and 2008**

|              | Year |      |
|--------------|------|------|
|              | 2000 | 2008 |
| Ethiopia     | 18   | 26   |
| Madagascar   | 24   | 29   |
| Mali         | 34   | 44   |
| Niger        | 35   | 39   |
| Chad         | 41   | 44   |
| Kenya        | 43   | 52   |
| Liberia      | 44   | 51   |
| Sierra Leone | 44   | 26   |
| Haiti        | 49   | 55   |
| Guinea       | 51   | 61   |
| Uganda       | 53   | 64   |
| Burkina Faso | 55   | 72   |
| Bolivia      | 56   | 67   |
| Ghana        | 58   | 74   |
| Nicaragua    | 62   | 68   |
| Indonesia    | 67   | 71   |
| Honduras     | 69   | 77   |
| Bangladesh   | 77   | 78   |
| Guatemala    | 84   | 90   |

Source: UNICEF and WHO, 2010.

## 7.2 Basic Facts about Programs in the FAFSA-2 Universe

### 7.2.1 Projects and Countries

Only three of the programs in the FAFSA-2 universe (101 programs in 28 countries) had a separate SO for WASH.<sup>240</sup> Of the 69 programs reviewed for MCHN activities (Chapter 6), 46 programs in 21 countries constructed water or sanitation infrastructure activities or both (see Figure 7.1).<sup>241</sup> In 38 programs (55 percent), Awardees delivered an

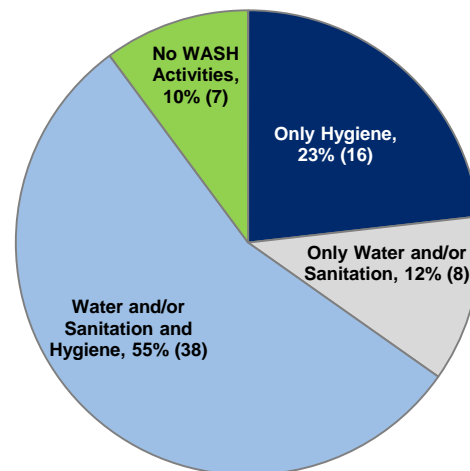
<sup>240</sup> The ADRA/Bolivia and PCI/Nicaragua programs appear to have been especially effective in directing Title II resources to WASH because they had a WASH objective.

<sup>241</sup> Only five of the WASH programs in the FAFSA-2 universe were not also MCHN programs, which is why the tallying of WASH components was done as part of the MCHN review.

integrated package of water and/or sanitation and hygiene activities. Eight programs (12 percent) had only a water and/or sanitation component and 16 (23 percent) had only a hygiene component. There were only seven Title II MCHN programs with no WASH interventions (10 percent).

This chapter focuses on the 38 programs in 19 countries that had sizeable water and sanitation infrastructure activities (see Table 1.3 for a list of programs reviewed).<sup>242</sup> For the purposes of the analysis in this chapter, follow-on programs by the same Awardee in the same country were counted along with the predecessor program as only one program. Thus, the 38 individual grants for Title II projects that were reviewed will be referred to as 31 programs in the remainder of this chapter. Field visits were also made to 9 of the 31 programs in four countries: Bangladesh, Guatemala, Honduras, and Niger.<sup>243</sup>

**Figure 7.1. Title II Health and Nutrition Programs with and without WASH Activities**



<sup>242</sup> Sixteen additional programs with water and sanitation infrastructure encountered during the larger review of MCHN programs are not reviewed in this chapter. They were missed in the earlier selection of programs for the WASH review because their work on water and sanitation infrastructure was not readily apparent in their Tracking Tables or IPTTs.

<sup>243</sup> The review of Title II programs with WASH was not as thorough as the authors would have liked due to missing documentation (which meant that the results of some of the programs are unknown), the limited number of countries included in the field visits (making it difficult to generalize results), and the limited amount of time to review documents.



**In Niger, a girl carries water home from a well.**



Herbert Caudill, CRS/Niger

### 7.2.2 Resources and Beneficiaries

According to the data that the Title II Awardees submitted to USAID/FFP in their annual Tracking Tables, 5 percent of all Title II development resources—US\$16.4 million—were devoted to the WASH technical sector in FY 2009, benefitting 394,932 persons.<sup>244</sup> Programs with WASH activities represented fewer than one-third of all Title II development programs in the FY 2009 Tracking Tables. This is a much lower proportion than in the earlier years of the FAFSA-2 time frame, when most programs did WASH.

## 7.3 Program Approaches and Interventions

### 7.3.1 Addressing Community Needs

To achieve their full potential, Title II development programs should address WASH needs in each of their communities. At a minimum, this includes

ensuring availability of safe water and sanitation services, accompanied by adequate hygiene education. There are three basic pillars of a successful rural WASH program:

- Appropriate water and sanitation technology
- Hygiene education
- Community participation and capacity strengthening (to ensure the continuing operation and maintenance of the systems)

Many of the Title II programs included in the FAFSA-2 WASH universe appear to have attempted to do too many things in too many places, often failing to make sure that individual communities had access to all three of the essential WASH components—potable water, adequate sanitation, and hygiene education. This has meant that dozens, perhaps hundreds, of villages were not able to benefit from the synergies that can be obtained in truly integrated programs.

### 7.3.2 Selecting Communities

The criteria used for including specific communities in a WASH component varied. The main one stated or implied in the proposals was that the community

<sup>244</sup> This excludes FY 2009 Title II PM2A research programs in Burundi and Guatemala, which were just beginning in late FY 2009, and the Afghanistan program, because they are not part of the FAFSA-2 universe.

be in the Title II target area. Examples of the types of criteria and the number of programs using them are provided in Table 7.3. One important criterion not stated in the program documentation reviewed is the community's track record in doing its part in other community development activities. It is also important that programs maintain the flexibility to add or delete communities as circumstances dictate rather than establishing a rigid list that cannot be changed.

### 7.3.3 Using Appropriate Technologies

**Water sources and delivery systems.** The selection of water sources is a function of what is available. Sources of water and delivery systems in the WASH programs reviewed in the FAFSA-2 included: hand-dug wells, drilled wells (boreholes), rainwater catchment devices, springs, and surface water. Wells were used in most of the programs. Some existing wells were rehabilitated, but others were newly constructed. Wells were both drilled and hand-dug. Spring water was used when available, particularly if topography allowed for gravity-fed systems. Surface water was often used, generally requiring some degree of treatment. At a minimum, chlorination was required. In a few cases, rainwater harvesting was used, but this was limited because generally it involved individual household infrastructure that can require intensive attention on the part of Awardee personnel and costs more per capita, as was the case in the SC/Guatemala FY 2007–FY 2011 program.

**Table 7.3. Community Selection Criteria**

| Criteria                | Number of Programs | Percent of Programs |
|-------------------------|--------------------|---------------------|
| Within target area      | 17                 | 55                  |
| Need                    | 3                  | 10                  |
| First come/first served | 2                  | 6                   |
| Health indices          | 1                  | 3                   |
| No criteria stated      | 8                  | 26                  |

**Point of delivery of water.** User access to potable water in the FAFSA-2 WASH universe programs included community open wells and wells with hand pumps, community taps, and household taps. Household connections are generally the preferred method, because they provide fewer opportunities for contamination during transportation and families develop a greater sense of ownership. Household members are more likely to wash their hands at the appropriate moments and to practice personal hygiene if the water is more readily available. They are also more likely to pay a periodic fee and to keep anyone from damaging their tap. The 12 programs that provided Level II services included household connections. (See Table 7.4 for a discussion of levels of water and sanitation services.)

The disadvantage of public taps or wells with hand pumps is that they also provide more opportunities for contamination post-collection, because water must be hauled a distance and stored. When water

**Table 7.4. Characteristics of Alternative Water and Sanitation Service Levels**

| Service Level | Average per Capita Water Demand (liters per day) | Water Distribution Facilities                               | Sanitation: Water/Excreta Disposal Facilities  |
|---------------|--|---|--|
| I             | 25   | Public stand posts serving 200–400 people within 100 meters | One privy per household  |
| II            | 50   | One yard hydrant per household                              | One pour-flush toilet/latrine with soak pit per household                              |
| III           | 100  | One kitchen tap and shower per household                    | One pour-flush toilet/latrine with septic tank per household                           |
| IV            | 100  | Same as III   | Same pour-flush toilets/latrines, but small-bore street sewers for treatment of wastes |
| V             | 200  | Full plumbing   | Conventional waterborne sewerage with treatment of wastes                              |

Source: McJunkin, 1982.

**Woman using a hand pump in Bangladesh to draw drinking water from a well.**



Herbert Caudill, SC/Bangladesh

is more difficult and time consuming to obtain than from a household tap, family members are less likely to wash hands. Also, since the tap or well is not on anyone's private property, the sense of ownership and responsibility is diminished, and the likelihood of vandalism or just plain carelessness increases. On the other hand, circumstances do exist when Level I (see Table 7.4) solutions are the best choice.

**Hand Pumps.** Programs visited that used hand pumps had either locally manufactured or imported pumps. Generally, spare parts are readily available on the local market, although the programs in northern Uganda noted a dearth of spare parts in that region, perhaps due to years of armed conflict. The technology used is simple, and operation and maintenance is not a problem as the Title II programs have generally done an excellent job of creating and training village water committees (VWCs). Nor do there appear to be cases where technological choices rendered the devices too expensive to operate and maintain, or where spare parts and know-how were not available in-country.

**Point-of-use water treatment.** Several Title II programs promoted disinfecting water at the

household level. While this is a proven technology for preventing diarrhea in developing countries, widespread adoption has not occurred (Fiebelkorn et al., 2012). These methods present difficult challenges in motivating sustained behavior change. Therefore, disinfecting water at the point of consumption should be encouraged only when there is no feasible way to provide potable water through a community system. The primary reason is that any intervention on the part of an Awardee requires a very large investment of time (and therefore money), and the behavior change can be short-lived. Also some methods, such as boiling water, require large amounts of fuel, which is often scarce and may mean accelerating deforestation on lands that are already under stress. Other methods, such as solar disinfection, have raw water quality requirements that may be difficult to meet. Getting households to purchase water treatment products can also be challenging.

**Disposal of excreta.** The technologies used by Title II development programs to dispose of excreta have been adequate. There were very few community sewerage facilities. Generally,



### Man pouring water to flush his water seal latrine in Bangladesh



Herbert Caudill, SC/Bangladesh

pit, ventilated improved pit, or water seal (pour-flush) latrines were used. The first two are service Level I and the water seal latrine<sup>245</sup> is Level II (see Table 7.4). In Bangladesh individuals frequently deliberately broke the seals on water seal latrines because of the amounts of water required to flush them. Project hygiene education personnel did a commendable job of convincing users that by breaking the water seals they were negating most of the benefits of owning a latrine. In one village a lady said, “After we understood that we didn’t have to use potable water to flush and that the water seal was better for our health because of the absence of flies and odors, we purchased new water seals and fixed our latrines.”

#### 7.3.4 Providing or Upgrading Systems to Higher Levels of Service

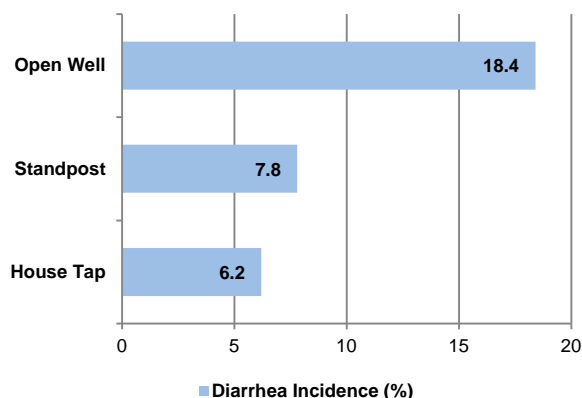
Since one of the major objectives of Title II development programs is to improve health and reduce child undernutrition, more consideration needs to be given to encouraging WASH programs to improve the levels of service that they are providing, including taking steps to upgrade the levels of service that they find in their target communities. Higher levels of service will have a

more significant impact on improving health. This can be seen in the results of a study conducted in seven Indian villages, shown in Figure 7.2, which found a definite decrease in the incidence of diarrhea in relationship to increasing the level of service (McJunkin, 1982). Only 39 percent of the 31 programs in the FAFSA-2 WASH universe—all in Latin America—provided water and sanitation infrastructure at Level II, which should become the goal for Title II development programs. (See Table 7.4 for convenient and useful definitions of levels of service.) Forty-eight percent provided infrastructure at Level I (15 programs), while only 13 percent (4 programs) provided infrastructure below Level I, i.e., below the minimum acceptable level (see Table 7.5). In Latin American, there is a long history of WASH programs that, through trial and error over the last 40 years, have reached an unwritten consensus that Level II is the appropriate level that development agencies should strive for in rural areas. Such organizations as the Inter-American Sanitary Engineering Association (AIDIS), the Pan American Health Organization (PAHO), and several bilateral and multilateral cooperation agencies have consistently updated and upgraded to what is most cost-efficient in terms of obtaining the greatest health results per dollar. Anecdotal evidence also indicates that a significant percentage of households in a village will elect, after having benefitted from an externally funded WASH project, to install indoor plumbing, including showers, sinks, and flush toilets from their own resources.

It is helpful when Awardee organizations provide technical guidance to their staff to improve the quality of their programs based on the state of the art and lessons that they have learned during program implementation. The comprehensive guidelines for small-scale rural water supply and sanitation projects in East Africa developed by CRS (2005) are a good example of this. CRS held a regional workshop to review water and sanitation guidelines it designed for the CRS/Ethiopia Title II program and adapted them for regional use. These guidelines included appropriate technology, community participation, and hygiene education. The guidelines have served CRS well in encouraging the inclusion of WASH activities within its Title II programs. It would be

<sup>245</sup> A water seal latrine is a pour-flush pit latrine that has a water barrier/seal to prevent odors.

**Figure 7.2. Diarrhea Incidence in Seven Indian Villages**



**Table 7.5. Levels of Water and Sanitation Services Provided by Title II Development Programs**

| Service Level | Number of Programs | Percentage |
|---------------|--------------------|------------|
| Below Level I | 4                  | 13         |
| Level I       | 15                 | 48         |
| Level II      | 12                 | 39         |

useful if these or other technical reference materials for doing WASH in Title II programs could be made available to other Awardees by the TOPS project or USAID/FFP.

**Assessment of the level of water and sanitation infrastructure.** Title II development programs, at a minimum, should be making an assessment of the WASH situation in all their target communities at the beginning of their programs. As indicated earlier, the infrastructure in some communities may no longer be adequate, even though they may have been classified at some point in time as having access to “potable water” or “sanitation facilities.” In these cases, it is desirable for the Title II program to take steps to bring whatever water supply and/or excreta disposal systems exist up to standard. This assessment should include identifying what infrastructure exists and its condition, and identifying gaps in infrastructure and the capacity of the communities to operate and maintain it.

This assessment would include answers to such questions as: Does every household have at least a water seal latrine and a yard tap from a community water system? Are there other WASH problems that need to be addressed? As part of this assessment, Awardees should also identify potential collaborators among the other organizations working in their areas—government organizations, NGOs, and other donor projects. This information can be used as a basis for developing a strategy to upgrade the level of services when necessary and for seeking other possible funding sources and partnerships to help in closing the gaps. Some ideas of what is possible can be gleaned from the experiences of the 12 Title II programs in LAC—all of which provided Level II services (see Box 7.2).

### 7.3.5 Promoting Better Hygiene, including Using Social and Behavior Change Communication

All 31 programs included in the FAFSA-2 WASH universe reported doing hygiene education. Most programs promoted the adoption of four hygiene behaviors (see Box 7.3). Many hygiene education models are in use in the world. In Latin America, the *Casa Saludable* (Healthy Home) model is common and has been quite successful in numerous countries. “Community-led total sanitation” (CLTS) is another model applied by some Title II programs (Chambers and Bongartz, 2009; Kar and Pasteur, 2005). Several of the Title II Awardees also employed the “participatory hygiene and sanitation transformation” (PHAST) model, which strives to change hygiene behavior with strong community involvement (WHO, 2011). These models are similar in that they all promote changes in the same behaviors and include community participation. Many models may look good on paper. But what is often forgotten is that to succeed they all require: (1) many health educator workdays per family educated, (2) very **capable** health educators, and (3) very **committed** health educators.

The USAID Hygiene Improvement Project (HIP) (FY 2004–FY 2010) included CLTS—an approach that brings community pressure to bear to eliminate the practice of open defecation. HIP

## Box 7.2. A Strategy for Providing Level II Services Based on Experiences in LAC Title II Development Food Aid Programs

Many of the 12 programs in LAC demonstrated considerable creativity in providing Level II services to their target populations. This included:

- **Improving existing WASH facilities.** In many countries, extensive work has already been done in rural water and sanitation. The scope of work in communities with existing, albeit deficient, water and sanitation infrastructure may require minimal investment to bring it up to Level II standards. CRS/Guatemala, for example, took advantage of a very good water system serving the village of Chuatega that had been built years before and reorganized the VWC, financed minor repairs to the water system, introduced chlorination, assisted families requiring latrines, and provided intensive hygiene education. That village benefitted from a comprehensive WASH intervention that complemented the health and nutrition interventions. All of this was accomplished at minimum cost.
- **Establishing alliances with other donors.** Other donors are engaged in water and sanitation activities in most countries included in the FAFSA-2 WASH universe. Many Awardees established partnerships with such organizations that invest extensively in water and sanitation infrastructure. This was a common experience among the 12 programs offering Level II services. SC/Honduras, for example, established alliances with a rather large WASH program funded by the European Union and with various Rotary Clubs and was able to ensure that all Title II communities benefitted from comprehensive WASH interventions. SHARE/Guatemala also identified organizations to establish partnerships for WASH activities.
- **Focusing on fewer communities.** At the design stage, the Honduras Title II Awardees purposefully reduced the number of communities in order to provide all of the WASH components in each of the communities served.
- **Increasing WASH activity budgets.** Some Title II development programs did not budget for WASH activities and needed to mitigate this lack of budget in some way, for example, by using funds budgeted for SBCC to introduce hygiene education.
- **Taking advantage of existing technical capabilities.** Various programs took advantage of existing professional capabilities within host country government water and sanitation agencies. The three Honduras Title II programs—SC, WV, and ADRA—took advantage of SANAA (the Honduran national water authority) engineers and water and sanitation technicians that gladly provided project designs, project supervision, community organization, and hygiene education at no cost to the Title II program. SANAA's efforts were a contribution of the Government of Honduras.
- **Maximizing use of voluntary community labor.** Voluntary community labor (not FFW) reduced costs of interventions and at the same time fostered a sense of ownership in the water and sanitation construction projects in Title II programs in Bolivia, Guatemala, Honduras, and Nicaragua.

### Box 7.3. Hygiene Behaviors Promoted by Title II Programs

- Proper personal hygiene
- Proper food hygiene
- Proper water hygiene
- Proper environmental hygiene

promoted changes in three key hygiene behaviors: (1) handwashing with soap, (2) safe disposal of feces, and (3) safe storage of household drinking water. For the hardware for safe disposal of feces, the project encouraged local market solutions. The project also emphasized deep community involvement and peer pressure to elicit changes in behavior. The main lessons learned were that: (1) a collaborative, inter-institutional approach to hygiene is very effective, (2) sanitation marketing can be effectively introduced to complement community-led initiatives, and (3) an “at-scale” approach is preferable to taking a successful pilot program and expanding it to a larger audience (HIP, 2011).

The level of effort dedicated to improving hygiene practices varied considerably across the Title II programs reviewed, with programs in Bangladesh at the intense range of the scale. The CARE/Bangladesh program (FY 2005–FY 2010) was very committed to the CLTS concept. This approach, coupled with very dedicated institutional personnel and with an ongoing, intensive Government of Bangladesh national campaign in the last few years to eliminate open defecation and maintain a sanitary environment, has been extremely effective. The SC/Bangladesh FY 2005–FY 2010 program also promoted CLTS and reported a reduction in diarrhea in children 6–23 months from 29.8 percent at baseline to 21.8 percent at endline as a result of hygiene education integrated with assistance for water and sanitation infrastructure.<sup>246</sup> Furthermore,

during the FAFSA-2 field visit to Bangladesh, in virtually every community members responded correctly when asked such questions as: “What would you do if you became aware that someone in the community is practicing open defecation?” or “When are the appropriate times to wash your hands?” The Title II programs in Latin America using the *Casa Saludable* model were equally successful.

The 2009 joint final evaluation of the four Title II development programs in Bolivia reported that Awardees worked to improve hygiene behaviors by applying social pressure within the community. The CHWs or community members visited homes frequently to monitor and observe practices, such as cleanliness of the latrine and dooryard, and to reinforce appropriate sanitation and hygiene messages. Volunteers used checklists to track their observations and negotiate with families to improve their behaviors. Several examples of creative strategies employed were soap necklaces, awards for the cleanest household, and promotion of health and hygiene messages in schools to change family norms.

On the other hand, some Awardees appeared to be dedicating less time to hygiene interventions, conducting only one “sanitation awareness” meeting with the community and calling that “hygiene education,” for example. The hygiene education methodology is important, but ultimately the capability and commitment of the educator are what is going to make a difference in the success of the behavior change efforts.

It is important that hygiene education be accompanied by devices that facilitate putting into practice what has been learned. Certain innovative technologies were introduced in various Title II programs to complement the hygiene education. For example, the programs in Malawi and Uganda used the “tippy tap.” This device is a simple water dispenser that enables people to wash their hands without wasting water. It consists of a can or plastic container that releases just enough water for a clean handwash each time it is tipped. When the tippy tap is released, it returns to its upright position (International Rescue Committee [IRC] WASH

<sup>246</sup> The impact of WASH interventions on diarrhea prevalence in preschool children in seven Title II programs, including SC/Bangladesh, is shown in Figure 6.6 in Chapter 6.



### Illustration of a “tippy tap,” used in programs in Malawi and Uganda.



Source: Elena Hurtado, <http://tilz.tearfund.org/Publications/Footsteps+21-30/Footsteps+30/The+Tippy+Tap.htm>.

Library, 2009). In addition to assisting communities with convenient handwashing facilities, much effort was made to promote the use of soap or ash for handwashing to be effective in preventing disease. Despite the usefulness of these tools, programs cannot be based solely on introducing appropriate technology, but rather the technologies can be used to complement an integrated WASH program.

#### 7.3.6 Hygiene Education in the Absence of Water and Sanitation Infrastructure

While hygiene education is a key ingredient in bringing about changes in the health status of a given population, the need for potable water and sanitary infrastructure cannot be minimized. In a meeting with leaders in a Sahelian rural village in Niger, all the right answers were given in response to the question: “When is it necessary to wash hands?” However, after giving all the right answers, one participant asked, “How can we do all this handwashing when we barely have enough water from our well to drink?” It is not realistic to assume that health and nutritional status are going to improve significantly with a series of educational interventions when there is no adequate source of water or a sanitary method of excreta disposal available. Therefore, it is a concern that 23 percent of the programs in the MCHN FAFSA-2 review

were doing only hygiene education with no support for water or sanitation infrastructure (see Figure 7.1).

#### 7.3.7 Dealing with Issues of Water Quality

Many water quality issues exist in the 19 countries with Title II programs included in the FAFSA-2 WASH universe. All faced high risks of bacteriological contamination; as a result, chlorination was essential and often done in water systems assisted by Title II.

Programs in Bangladesh, Bolivia, and Mali are illustrative of some of the problems that Title II Awardees run into. In Bangladesh, the presence of arsenic, a poison, in the groundwater is a major problem. Arsenic removal is technically possible but requires a level of community involvement and expense that is unlikely no matter how much the population is educated about the hazards of arsenic ingestion. An equally serious problem is how to dispose of the arsenic that has been removed. There is now consensus in Bangladesh among organizations engaged in managing water supplies that the hand pumps of wells declared arsenic free will be painted green and the hand pumps of wells containing arsenic will be painted red. Water with arsenic is acceptable for cleaning, for flushing latrines, and for many other uses. However, it is a very laborious educational challenge to ensure that users understand that, while it is acceptable for some purposes, it is not acceptable for drinking.

Salinization of groundwater is another serious water quality issue. This is a critical problem in Bangladesh and Mali. In areas of Bolivia, where there had been mining operations, groundwater was frequently not safe for drinking because it contained minerals hazardous to human health.

Post-project monitoring of water quality is perhaps a more serious, long-term issue. Host country agencies (such as the MOH) are responsible for checking water quality, but they frequently do not have the resources to do so. Kits that can be used by community personnel to keep track of residual chlorine, the presence of chemical contaminants, and



bacteriological quality are on the market.<sup>247</sup> There are some challenges with each of these kits, but they should be considered as an option within the context of the particular country.<sup>248</sup>

### 7.3.8 Encouraging Community Participation and Strengthening Capacity

Communities need to be fully involved in the development of a WASH program from the very beginning. In the case of a water system, it is relatively simple to elicit involvement from the community because access to water is something that most community members are very interested in, and they will expend an incredible amount of energy and effort to ensure that it gets done. Having access to potable water, in other words, is a much felt need. Communities need to participate in the planning of the system, the construction process, and management of the system. There are choices that must be made, and it is good for them to participate in making these choices. An important lesson learned is that labor to construct their water system or latrines is something that community members can donate, and projects that require this have found that community involvement in building WASH infrastructure generates a sense of community ownership of and commitment to maintain water systems and latrines. Paying for this community labor with FFW can be a deterrent to community ownership of the infrastructure.

Equally important is the establishment of VWCs. The committees' names vary by country, but essentially all have responsibility for:

- Operating and maintaining water and sanitation infrastructure
- Establishing and collecting fees
- Abiding by established guidelines
- Establishing clear responsibilities for operation and maintenance

<sup>247</sup> See, for example, <http://www.hach.com/>.

<sup>248</sup> Typical problems include the difficulty in procuring and the high cost of spare parts and reagents, training appropriate candidates to use the equipment, interpretation of test results, and taking action based on that interpretation.

Twenty-nine of the 31 programs included in the FAFSA-2 WASH universe established and trained VWCs. Field visits to programs in four countries confirmed that Awardees had done a very good job creating VWCs and training committee members. Interviews with VWC personnel also indicated that they had a clear vision of their responsibilities (see Box 7.4 and Box 7.5).

Although little mention was made of “second tier” organizations, communities appeared to have someone they could turn to when there was a problem that they could not solve. Many years ago, SC/Honduras pioneered the creation of a second tier organization, *Asociación de Juntas de Agua Potable* (Village Water Committee Association), with a representative from each VWC in a particular geographical area. Each VWC contributes a certain amount of money to that regional association, which in turn provides services, such as the sale of chlorine

#### Box 7.4. Assessing the Capacity of the Village Water Committees

Questions typically asked by the FAFSA-2 team included:

- What are the responsibilities of the VWC?
- What is your role in the VWC?
- What happens when something goes wrong with the system? (This question was tailored to the nature of the system. For example, if the source of water was a hand pump, the question was: “What do you do when you move the pump handle but no water comes out?”)
- How much is the user tariff? Do users pay it?
- What tools do you have for repairs?
- What training did the (Awardee) give you? Did the (Awardee) leave an operations manual with you?

### Box 7.5. Village Water Committees: Promising Practices, Innovations, and Lessons Learned

- Assisting communities with the process of obtaining legal status for their VWCs has been very valuable in establishing the importance of the committees and enabling them to carry out their assigned tasks.
- Providing adequate training of VWC members and maintenance personnel has contributed significantly to the sustainability of water systems and water points.
- Arranging with local entities to conduct periodic audits of VWCs to ensure transparent handling of collected tariffs helps instill confidence on the part of village members in the management team of their facilities.
- Providing VWCs with portable devices to monitor water quality (e.g., chlorination testing kits) was effective in certain circumstances.



Herbert Caudill, CRS/Niger

Village water committee in Niger.

in retail amounts, the sale of tools and spare parts, and TA. SC/Honduras ensured that VWCs organized under the Title II program were incorporated into their respective associations. Honduras has now gone a step further and each municipality has created (or is in the process of creating) an *Asociación de Juntas de Agua Municipal* (Municipal Water Committee Association).

These municipal water committee associations are providing many of the same services the SC model provided during the Title II program. A second tier organization is a very useful tool in providing a mechanism for follow up of repair and maintenance of village water and sanitation systems.

#### 7.3.9 Coordinating and Collaborating with Host Government Institutions

Awardees can add considerable value to their programs by working in close coordination with the

host government institution and other institutions that deal with WASH issues. Frequently, these are national water agencies, municipal governments, or other local organizations. Such collaboration has the following advantages:

- Access to information as to who is working in the sector already in order to take advantage of other funding
- Access to high-quality technical support, which is often available from water ministries or equivalent organizations
- An increased likelihood of sustainability due to the permanence of host country organizations
- Useful guidance about what is already being done in a given geographical area

Mr. Attaou Mahaman Laminou, Secretary General of the Ministry of Water, Environment and Anti

Desertification in Niger, expressed this well when he told members of the FAFSA-2 team, “There is much that our Ministry can contribute. We have an inventory of wells in Niger and of the population served. We can make available our technical resources, and we can assist in helping to avoid duplication of effort.”<sup>249</sup> In the short run, it may seem like extra effort to coordinate with these institutions, but it will pay off in the long run with a greater sense of ownership on the part of the national and local authorities. Twelve of the 31 programs (39 percent) included in the FAFSA-2 WASH universe were classified as having an “intense” close working relationship with host country national and local institutions (see Table 7.6). But an equal number had a “negligible” relationship. Reasons frequently given by the Awardees for non-collaboration with national and local agencies include irresponsibility, unreliability, inefficiency, corruption, and unresponsiveness. While working with local government institutions may be challenging, it is clear that the effort to involve the national and local agencies will, in the long term, pay off. National water agencies are much more likely to be around for many years, long after the Awardee is gone. If there is going to be any follow-up to what was accomplished under Title II WASH programs, local agencies need to be involved.

<sup>249</sup> Laminou, Attaou Mahaman. February 23, 2011. Personal communication.

### 7.3.10 Integrating Water, Sanitation, and Hygiene within Title II Development Programs

How well WASH activities were integrated with other Title II program components, including AG/NRM, HN, and EPDM, can be best appreciated in the field. In the programs visited, it was clear to the observer that field personnel would meet periodically to make sure that visits to target population communities would be as efficient as possible and include as many members of the team as feasible. Hygiene education activities were often combined with other training events to take advantage of members of the community gathering in a specific place. Another example was the use of wells for both irrigation and domestic water when it made sense to do so. This type of integration was more difficult in some programs, because different villages would be participating in different interventions. While in some cases this fragmentation of interventions could not be avoided, the synergy obtained from a variety of interventions in one community produces a benefit that is not possible with single interventions.

### 7.3.11 Water and Sanitation Infrastructure Outputs

It is surprising that only 18 of the 31 programs in the FAFSA-2 WASH universe (58 percent) included water and sanitation infrastructure targets in their proposals and reported on them. Only 8 of the 18

**Table 7.6. Intensity of the Relationship between Title II Programs and Host Government WASH Agencies**

| Category   | Description of the Relationship  | Number of Programs in Category | Percent of Programs in Category |
|------------|--|--------------------------------|---------------------------------|
| Negligible | Little or no interaction with host government WASH agencies.   | 12                             | 39                              |
| Moderate   | Occasional TA, encounters, meetings. Perhaps help in drilling wells, identifying a potential contractor, etc.  | 7                              | 22                              |
| Intense    | Total involvement on the part of the host country WASH agency, be it a municipal government or a national water agency. May include monetary or in-kind contributions to projects. Inclusion in national or local programs. May involve agreement to follow-up on operation and maintenance of the project's water and sanitation systems. | 12                             | 39                              |

(26 percent of all projects reviewed or 44 percent of the projects with targets) met their targets (see Table 7.7). Despite these reporting issues, the review of program documents by the FAFSA-2 revealed that Awardees constructed a significant amount of water and sanitation infrastructure, benefiting a large number of people (see Table 7.8). However, performance was not even across Awardees and programs. More specifically, only 37 percent of the programs account for all of the water systems constructed, and 59 percent of the latrines were constructed in one program—SC/Bangladesh (FY 2005–FY 2010).

**Table 7.7. Water and Sanitation Infrastructure Target-Setting and Achievement in Title II Development Programs**

|   | Number of Programs | Percent of Programs |
|---|--------------------|---------------------|
| Programs that set infrastructure targets and met them                       | 8                  | 26                  |
| Programs that set infrastructure targets and did not fully meet them        | 10                 | 32                  |
| Programs that did not set infrastructure targets and did not build anything | 6                  | 19                  |
| Programs that did not set infrastructure target but did build something     | 7                  | 23                  |

**Table 7.8. Types and Beneficiaries of Water and Sanitation Infrastructure Constructed by Title II Development Programs**

| Infrastructure Type | Number Constructed | Estimated Beneficiaries |
|---------------------|--------------------|-------------------------|
| Water systems       | 570                | 228,000                 |
| Wells               | 3,277              | 98,310                  |
| Latrines            | 65,822             | 394,932                 |

### 7.3.12 Outcomes of Water, Sanitation, and Hygiene Interventions

**Evolution of Indicators.** The indicators recommended or required by USAID/FFP and measured by Awardees to monitor and evaluate Title II WASH activities evolved considerably over the FAFSA-2 time period. From 1999 to 2007, the indicators most commonly used to measure the results of Title II WASH activities were those recommended by FANTA (Billig et al., 1999). These were classified as “impact indicators” and “monitoring indicators” as described in Box 7.6 and Box 7.7. In current parlance, all the indicators in these two boxes would be called “outcome indicators” and not “impact indicators,” except “prevalence of diarrhea in children under 36 months.” For the first time in 2007, USAID/FFP established required “monitoring indicators” for health behavior change to be used in Title II Programs with WASH activities as follows: “percent of caregivers demonstrating proper (1) personal hygiene behaviors, (2) food hygiene behaviors, (3) water hygiene behaviors, and (4) environmental hygiene behaviors” (FFPIB 07-02, USAID/FFP, 2007). Because these new reporting requirements were issued well into the life of most of the programs reviewed in the FAFSA-2 and were only required for programs that began in FY 2007 or later, they did not apply in most cases.

Standard outcome indicators were revised by USAID/FFP in December 2011 as shown in Table 7.9, superseding earlier guidance (FFPIB 11-03, USAID/FFP, 2011). The revised WASH indicators apply only to Title II development programs awarded in FY 2011 or later, and are not relevant to this assessment. Regrettably, these new indicators do not include one that measures the impact of WASH activities on preventing/reducing diarrhea in children 0–35 months of age.

**Outcomes.** Seventeen (55 percent) of the 31 programs in the FAFSA-2 WASH universe used at least one of the FANTA-recommended WASH “impact indicators” (see Box 7.6). Fifteen (88 percent) of these programs achieved improvements between the baseline and final

### Box 7.6. Recommended WASH Impact Indicators (FANTA, 1999)

- **Percentage of children under 36 months with diarrhea in the last two weeks**, where “diarrhea” is defined as more than three loose stools passed in a 24-hour period.
- **Quantity of water used per capita per day**, where all the water collected or delivered to the household and used for personal purposes is considered.
- **Percentage of child caregivers and food preparers with appropriate handwashing behavior**, where “appropriate handwashing” includes the four critical times at which this needs to be done and the technique used.
- **Percentage of population using hygienic sanitation facilities**, where “sanitation facility” is defined as an excreta disposal facility, typically a toilet or latrine, and “hygienic” means that there are no feces on the floor or seat and there are few flies.

Source: Billig et al., 1999.

### Box 7.7. Recommended WASH Monitoring Indicators (FANTA, 1999)

- **Percentage of households with year-round access to improved water source**, where “access” means either direct connection to the home or a public facility within 200 meters of the home.
- **Percentage of households with access to a sanitation facility**, where “sanitation facility” is defined as an excreta disposal facility, typically a toilet or latrine, and “access” means that the household has a private facility or shares a facility with others in the building or compound.
- **Percentage of recurrent costs for water supply services provided by the community served**, where “recurrent costs” refers to the full operating and maintenance costs of the water supply system that serves the community, including preventive maintenance and repairs. The numerator for this indicator is monthly recurrent costs paid by the community for water supply services, and the denominator is total monthly recurrent costs for water supply services.
- **Percentage of constructed water supply facilities maintained by the communities served**, where “constructed facilities” refers to those established by the NGO or project.

Source: Billig et al., 1999.

**Table 7.9. 2011 Revised USAID/FFP Standard WASH Indicators**

| Indicator Number | Applicable to Development Programs that Aim to:   | Outcome Indicator Title  |
|------------------|---|--|
| 9                | Increase access to potable drinking water         | Percentage of households using an improved drinking water source   |
| 10               | Increase access to improved sanitation facilities | Percentage of households with access to an improved sanitation facility  |
| 11               | Improve hygiene practices                         | Percentage of households with children 0–23 months that have water and soap or locally available cleaning agent at a handwashing place |

Source: FFPIB 11-03 (Reissued), December 20, 2011.



evaluation surveys. CRS/Liberia, for example, achieved an increase in handwashing before food preparation from 43 percent at baseline to 70 percent at endline four years later.

Nineteen programs (61 percent) used at least one of the FANTA-recommended WASH “monitoring indicators” (see Box 7.7). All nineteen (100 percent) showed improvements in their chosen indicators between their baseline and final evaluation surveys. On average, 16 programs increased access to an improved water source by 23 percentage points. Some of the results were quite impressive. For example, in the CARE/Bolivia program, “access to safe drinking water” increased from 34 percent to 83 percent and “access to an improved latrine” increased from 0 percent to 76 percent in their target areas. Increases in “access to an improved water source” achieved by the Title II programs reviewed with data are shown in Table 7.10. CARE/Sierra Leone and CRS/Kenya raised the proportion of their target populations with access to an improved water source between their baseline and final evaluation surveys from 0 percent to 19 percent and 87 percent, respectively, which is impressive.<sup>250</sup>

## 7.4 Cross-Cutting Issues and Opportunities

Country-level Awardee offices appear to have highly motivated staff willing to take on the challenges inherent in implementing a food security program. They also seem to have a good grasp of the special circumstances of the country where they are working. Resolving the following issues common to a number of programs would present an opportunity to improve performance.

- **Hesitancy to implement WASH projects.** A number of Awardees appear to have been reluctant to include WASH activities in their programs, especially infrastructure, for many of the same reasons described in Section 5.5.1, such as the additional technical staff required to construct

**Table 7.10. Increases in the Percent of Target Populations with Access to an Improved Water Source in 16 Title II Programs in the FAFSA-2 WASH Universe between Baseline and Final Evaluation Surveys**

|                   | Surveys  |       |
|-------------------|----------|-------|
|                   | Baseline | Final |
| Guatemala/CRS     | 4        | 12    |
| Sierra Leone/CARE | 0        | 19    |
| Madagascar/CARE   | 28       | 27    |
| Kenya/CARE        | 34       | 49    |
| Ethiopia/CRS      | 22       | 58    |
| Bolivia/FHI       | 30       | 67    |
| Indonesia/CRS     | 59       | 74    |
| Honduras/ADRA     | 71       | 75    |
| Bolivia/ADRA      | 58       | 77    |
| Guatemala/CARE    | 49       | 80    |
| Bolivia/CARE      | 34       | 83    |
| Guatemala/SC      | 74       | 85    |
| Kenya/CRS         | 0        | 87    |
| Bolivia/SC        | 59       | 88    |
| Bangladesh/SC     | 95       | 99    |
| Bangladesh/CARE   | 97       | 100   |

quality potable water systems and the technical complexity of such systems. There is a need to probe into why this is the case and to remove barriers that preclude Awardees from doing more water and sanitation infrastructure in Title II development programs.

- **Start-up delays.** Many programs had significant start-up delays, including problems with food shipments, monetization, and delays in the arrival of appropriate personnel in-country. While these delays are not unique to programs with WASH and have been discussed elsewhere in this report, they are particularly problematic for construction activities and meeting infrastructure targets. Either an allowance of extra time to provide for

<sup>250</sup> Section 6.3.2.5 reports on measurement of hygiene improvement indicators and the results in Title II MCHN programs.

initial delays or a downward adjustment in targets needs to be made, recognizing that one to two years are likely to be lost in project start-up.

## 7.5 Conclusions and Recommendations

### 7.5.1 Conclusions

- Access to improved water sources by target populations consistently increased between the baseline and final evaluation surveys of Title II programs that constructed water infrastructure.
- A high percentage of the programs used at least one of the 1999 FANTA-recommended WASH “monitoring indicators” (61 percent) or “impact indicators” (55 percent). Among programs that evaluated these indicators, all achieved improvements in monitoring indicators and 88 percent achieved improvements in impact indicators. Sixteen programs increased access to an improved water source by an average of 23 percentage points.
- A significant amount of water and sanitation infrastructure was constructed by Title II programs.
- With some exceptions, most of the hand pumps provided to the communities were appropriate in that maintenance was generally simple and spare parts were readily available.
- The “level of service” for water and sanitation infrastructure was generally acceptable. Thirteen percent of the programs, however, provided infrastructure that was below the minimum acceptable Level I. The success of many LAC Title II programs demonstrated that there are many feasible strategies to provide Level II services.
- Ninety-four percent of the Title II programs with WASH interventions created and trained VWCs. This very important step greatly improved the likelihood of successful operation and maintenance once the Title II programs ended.

### Box 7.8. WASH Policy Implications

To maximize the health and nutritional impact of Title II development resources, more programs should deliver an integrated WASH package in more communities by:

- Assessing needs
  - Forging alliances to increase funding
  - Improving the level of service to Level II
  - Measuring the impact on diarrhea prevalence
- Many Awardees appear to include water and sanitation infrastructure in their Title II programs only reluctantly. This may be due to a fear to commit to a program in which the potential Awardee is not experienced or uncertainty about whether sufficient funds will be available. More information from Awardees on the barriers is needed.
  - While 39 percent of the Title II programs doing WASH had a close working relationship with host country organizations, most programs did not, which reduces the likelihood of long-term sustainability and impact.
  - Many WASH activities were not well integrated within communities. Water and sanitation infrastructure appeared to be scattered randomly, with one community getting a well and another a few latrines. Few programs had a comprehensive plan to solve the overall environmental health problem in each of their intervention communities.
  - Awardees also neglected to take advantage of specific opportunities to intervene. For example, in a village in Niger, where water scarcity is a major concern, the Awardee fully rehabilitated a well and brought it up to satisfactory standards, but did not rehabilitate the other well in the village, which was totally unprotected and

obviously contaminated, but nevertheless used for drinking water. A very small expenditure would have left the community with its two wells fully meeting Level I standards.

- Budget allocations to WASH activities are very low considering that a main objective of the Title II program is to diminish undernutrition and the relationship between WASH, diarrhea, and undernutrition is well established.
- There seems to be a limited understanding among many Awardees of the importance of WASH activities at the time proposals are developed and during the initial stages of project implementation.
- Communities involved in Title II WASH activities appeared to be eager to make great efforts to improve their community environment for better health.
- Program WASH personnel in the field were highly motivated and appeared to have good relationships with their communities.
- Health educators appeared to have the right tools to promote hygiene. The availability of a variety of proven methodologies and innovative technologies, such as the tippy tap, facilitated implementing adequate hygiene education components in Title II programs.

### 7.5.2 Recommendations

- USAID/FFP should strongly encourage in RFAs that potential Awardees include integrated WASH activities in their applications to elevate communities' water and sanitation infrastructure to Level II; make the case that integrated WASH services are essential for reducing diarrhea, undernutrition, and food insecurity; and furthermore, urge applicants to thoroughly analyze and provide the most cost-effective WASH alternatives to achieve the best health and nutrition results. (**Recommendation 42**)<sup>251</sup>

<sup>251</sup> The numbers after certain recommendations are the same as those assigned to the major recommendations in the FAFSA-2 summary report.

- USAID/FFP should consider making WASH activities a separate specific result.
- USAID/FFP should require Awardees to assess the water and sanitation infrastructure situation in every program community, make an inventory, and prepare a plan for closing the gaps. This could include:
  - Taking advantage of what is already there
  - Identifying organizations as partners that are already working in the area
  - Seeking other funding sources and establishing partnerships to close the gaps

#### (Recommendation 43)

- USAID/FFP should, as a rule, require Awardees to work in close collaboration with host country governments.
- USAID/FFP should strongly encourage Awardees to form alliances with partners working in water and sanitation to increase funding and coverage, including:
  - Host government agencies
  - Other NGOs, bilateral aid agencies, international organizations, and the private sector
  - Other USAID projects

#### (Recommendation 44)

- USAID/FFP should require that impact on reducing diarrhea prevalence in children under 36 months of age be evaluated in Title II WASH activities. (**Recommendation 45**)
- USAID/FFP should probe into the barriers to Awardees constructing water and sanitation infrastructure and ways to overcome them, with the assistance of the TOPS project. It would be helpful if TRM for doing WASH in Title II programs could be made available to Awardees by the TOPS project or USAID/FFP.
- Awardees should avoid using FFW to pay for community labor to construct water and sanitation

infrastructure. This practice denies villagers the opportunity to make a significant, sacrificial contribution that will foster a deeper sense of ownership in their water and sanitation systems. **(Recommendation 46)**

- Awardees should set and report on numerical targets for water and sanitation and establish monitoring systems. **(Recommendation 47)**

## Bibliography for Chapter 7

Billig, Patricia; Bendahmane, Diane; and Swindale, Anne. 1999. "Water and Sanitation Indicators Measurement Guide." <http://www.fantaproject.org/downloads/pdfs/watsan.pdf>.

Brown, Kenneth H. 2003. "Diarrhea and Malnutrition." *Journal of Nutrition*. Vol. 133, No. 1, p. 3285.

Catholic Relief Services, East Africa Regional Office. 2005. *Guidelines for the Development of Small-Scale Rural Water and Sanitation Projects in East Africa*. Nairobi, Kenya: CRS.

Chambers, Robert and Bongartz, Petra. 2009. "Beyond Subsidies: Triggering a Revolution in Rural Sanitation." <http://opendocs.ids.ac.uk/opendocs/handle/123456789/497>.

Fiebelkorn, Amy P. et al. 2012. "Systematic Review of Behavior Change Research on Point-of-Use Water Treatment Interventions." *Social Science and Medicine*. Vol. 75, No. 4, pp. 622-33.

Hunter, Paul R.; MacDonald, Alan M.; and Carter, Richard C. 2010. "Water Supply and Health." *PLoS Medicine*. Vol. 7, No. 11, e1000361.

Hygiene Improvement Project. 2011. *USAID Hygiene Improvement Project (2004–2010): End of Project Report*. Washington, DC: AED.

International Rescue Committee (IRC) WASH Library. 2009. "Low-Cost Hand-Washing Technology." <http://www.IRC.nl/page/13215>.

Kar, Kamal and Pasteur, Katherine. 2005. *Subsidy or Self Respect? Community Led Total Sanitation*. Brighton: Institute for Development Studies.

McJunkin, F. Eugene. 1982. *Water and Human Health*. Washington, DC: USAID.

Rohde, Jon Elliot. 1984. "Selective Primary Health Care: Strategies for Control of Disease in the Developing World. XV. Acute Diarrhea." *Reviews of Infectious Diseases*. Vol. 5, No. 6, p. 840.

UNICEF and WHO. 2010. *Progress on Sanitation and Drinking Water: 2010 Update*. Geneva: UNICEF/WHO.

USAID/FFP. 2005. *Strategic Plan for 2006–2010*. Washington, DC: USAID.

USAID/FFP. 2007. "New Reporting Requirements for Food for Peace." FFPIB 07-02.

USAID/FFP. 2011. "Revision to Food for Peace Standard Indicators Collected in Baseline Surveys and Final Evaluations (Reissuance)." FFPIB 11-03 (Reissued).

U.S. Department of State. 2009. *Senator Paul Simon Water for the Poor Act: Report to Congress*. Washington, DC: U.S. Department of State.

WHO. 2011. *PHAST Step-by-Step Guide. A Participatory Approach for the Control of Diarrheal Diseases*. Geneva: WHO.