

Water For People's Approach to Building Sustainable Capacity in Sanitation and Wastewater Management: Case Studies

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Abstract

Water For People (WFP) is an international, humanitarian, non-profit organization whose mission is to help impoverished people worldwide improve their quality of life by supporting sustainable drinking water, sanitation and hygiene projects. WFP accomplishes this mission by providing volunteers with technical expertise to assist with special projects such as trainings, assessments, strategic planning, and many other skills that are needed by governments, utilities and communities in developing countries. Water For People assists rural communities by partnering with local indigenous nongovernmental organizations (NGO's) that help manage the community-based projects and support our self-help model. This model uses a community development approach that involves women working with men on local water committees. Through this process, community members are educated about the technical, financial, institutional and social elements of sustainable projects. WFP also includes health and hygiene education in the model by creating a network of community health promoters so water and sanitation systems are used properly and kept clean and free from re-contamination. In urban and peri-urban areas, WFP has had success with bringing stakeholders (community, government, utilities and NGOs) together to develop a plan that addresses issues which have been barriers to successful projects, such as land ownership, payment for water and sanitation infrastructure and maintenance, protection of the hardware, training, and health and hygiene education. WFP volunteers work with local staff to bring the technical skills that might be needed for training, assessment, strategic planning, evaluations and other capacity building activities. We are currently working in Asia (Vietnam and India), Africa (Kenya, Malawi, Tanzania, Uganda and Zambia), and Latin America (Bolivia, Ecuador, Guatemala and Honduras). This paper provides case studies that highlight Water For People's approach to building sustainable capacity for water, sanitation and wastewater management, and hygiene education by strengthening technical, financial, institutional, and social capabilities of community, non-governmental and professional organizations.

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Description of Organization

Water For People (WFP) is an international, humanitarian, non-profit organization that was started in 1991 through the efforts of water professionals from the American Water Works Association (AWWA). Water For People – Canada was formed in 1995. Our

mission is to help impoverished people worldwide improve their quality of life by supporting sustainable drinking water, sanitation and hygiene projects. WFP has become the charity of choice of the North American water industry and all the major professional water associations. These associations provide financial, in-kind, and volunteer support. We also receive support from engineering firms, manufacturing companies, Rotary Clubs, churches, schools, and other organizations. In turn, we provide volunteers with technical expertise to assist with special projects such as trainings, assessments, strategic planning, and many other skills that are needed by governments and utilities in developing countries.

Project Model

Water For People's program is a self-help approach. We help communities construct their drinking water and sanitation systems by using technology that is easy for the communities to use, maintain and repair. WFP mobilizes communities by helping organize water committees, using locally available materials, and conducting community-based training so the communities are empowered and responsible for the long-term benefits from their water and sanitation systems. Water For People's programs also involve health and hygiene education and the training of community health promoters.

Water For People assists rural communities by partnering with local indigenous nongovernmental organizations (NGO's) that help manage the community-based projects and support our self-help model. This model uses a community development approach that involves women working with men on local water committees. Through this process, community members are educated about the technical, financial, institutional and social elements of sustainable projects. Concepts include water and sanitation system design, construction, maintenance and repair, fundraising, rate-setting and revenue collection, selecting and electing coordinators and officials, health and hygiene, and data collection and project evaluation. With this education the local water committee can make informed decisions about which culturally- and technology-appropriate water and sanitation systems will work best for them. Once these decisions are made locally, WFP, working through the NGO with the local water committee, helps the community implement simple, low-cost water pumps, water tap stands, hand-washing stations, clothes-washing stations, showers and latrines, using local materials whenever possible. WFP also includes a large amount of health and hygiene education in its programs by creating a network of community health promoters so water and sanitation systems are used properly and kept clean and free from re-contamination. This approach has been successful with building local capacity so communities are not dependent on outside groups for long-term sustainability.

In urban and peri-urban areas, WFP has had success with bringing all parties (community, government, utilities, NGOs) together to develop a plan that addresses issues which have been barriers to successful projects, such as land ownership, payment for water and sanitation infrastructure and maintenance, protection of the hardware, training, and health and hygiene education. WFP volunteers work with local staff to bring the technical skills that might be needed for training, assessment, strategic planning, evaluations and other capacity building activities.

Case Studies

WFP works with all organizations and businesses in a non-exclusive arrangement, which has resulted in over 80 successful projects per year serving around 500,000 people annually in countries around the world. We are currently working in Asia (Vietnam and India), Africa (Kenya, Malawi, Tanzania, Uganda and Zambia), and Latin America (Bolivia, Ecuador, Guatemala and Honduras). The following case studies highlight Water For People's approach to building sustainable capacity for water, sanitation and wastewater management, and hygiene education by strengthening technical, financial, institutional, and social capabilities of community, non-governmental and professional organizations.

Vietnam

Water For People is currently working in the Mekong Delta of Vietnam to improve water and sanitation facilities and basic hygiene knowledge for school children in and around the U Minh Thuong National Park buffer zone. In partnership with CARE Vietnam and the Kien Giang Provincial Education Department, the "Clean Water for Schools" program is a response to assessment findings that show a high incidence of health problems among children from 37 schools within the region. The illnesses encountered include stomach aches, diarrhea, headaches, and dengue fever, virtually all of which are water and sanitation related.

Kien Giang Province is located on the southern coast of Vietnam, bordering the Gulf of Thailand and Cambodia. The U Minh Thuong National Park within the province is an important wetland area and rare plant and animal habitat. The area includes a network of canals which serve a number of purposes ranging from a source of potable water to rubbish disposal and a means for human waste disposal. This situation poses a threat not only to the health and wellbeing of the human population, but also negatively impacts the fragile wetlands environment.

The "Clean Water for Schools" program will implement the design and construction of water and sanitation facilities within the schools, directly benefiting more than 4,600 students. The decision to partner with CARE Vietnam was based on that organization's past and current successes and its strong working relationships with government agencies and officials at all levels. The program itself will be undertaken by the Water Facilitator staff member of CARE who will be responsible for the on-site work and assessment.

Through the partnership with CARE-Vietnam, we are extending this assistance to those communities connected with the schools, educating community members about how to build hand washing stations and latrines. To date we have helped about 30 schools to build these structures and more importantly, we have taught the young people how to share health and hygiene information with their families.

WFP has also been supporting our mission of sustainability by providing volunteers to governmental and non-governmental organizations in Southeast Asia for technical assistance, mentoring and train-the-trainer programs. Specifically, WFP has helped identify and mobilize North American water and wastewater professionals for the following projects:

- the Southeast Asia Water Utility Network (SEAWUN) Certification and Training Support for Professional Associations in Water (CATSPAW) project; and
- the Indonesian Water Supply Association (PERPAMSI) to help establish the first sustainable drinking water zones in 3 cities in Indonesia.

Both of these projects resulted in the development of local expertise for respective project objectives. For the CATSPAW project, the volunteers helped SEAWUN professionals develop a regional infrastructure for a wastewater operator/manager training program based on local need-to-know assessments, provided initial training resource material, and facilitated a relationship between SEAWUN and the Water Environment Federation (WEF). For the PERPAMSI project, the volunteers helped Indonesian water professional develop a standard operating procedures manual for use by Indonesian utilities and facilitated a relationship between PERPAMSI and the American Water Works Association (AWWA).

India

Water For People began working in India in 1996. What started as a small pilot project has grown into a full-fledged program to help eliminate arsenic from community wells in West Bengal. West Bengal is very rich in groundwater and more than 80 percent of its population taps this source for its drinking water. Arsenic occurrence in the region's aquifers has been attributed to geological factors. Arsenic mobilization in the water is speculated to have been caused by over withdrawal of groundwater during cultivation, application of arsenic pesticides followed by phosphate fertilizers, or both.

The contaminated groundwater constitutes the sole source of drinking water for 5.3 million people in West Bengal who use hand pumps to draw water from scattered wells. The effects of arsenic accumulation in the human body are well documented – skin lesions and disorders of the circulatory and nervous system. Current evidence indicates that symptoms of arsenicosis develop after years of exposure to arsenic contaminated water.

WFP is partnering with the Deemed University Bengal Engineering College (BEC) to design and install domestic and well-head arsenic removal units. A single arsenic filter unit may serve 200-300 families and needs regeneration (back flushing and maintenance of the filter) after eight to 12 months. The cost of a single well-head is offset by the fact that it provides safe drinking water to a greater number of people. The community well-head unit is preferable to individual units with respect to maintenance and monitoring. A fundamental component to this initiative is fostering community participation, developing an educational model and establishing operational capacity through the establishment and collection of appropriate and equitable tariffs.

The crisis in West Bengal unfolded over many years, and its solution will demand a commitment of time, expertise and funds. While the accumulated effects of arsenic poisoning will take years to reverse, the West Bengal arsenic filter project has already improved the health and quality of life for significant numbers of villagers.

Water For People has now established India as a full-time Country Program with an office and staff person. We will use the office to expand our arsenic abatement work in West Bengal while providing technical assistance in urban areas, and community-based, appropriate technology projects in peri-urban and rural areas.

Africa

Water For People and the U.S. Environmental Protection Agency (EPA) formed a unique partnership, "Water For Africa," in October 2000. The work of Water For Africa (WFA) aims to help the growing number of urban poor in the unplanned and informal settlements of African cities obtain safe drinking water. The African urban population is expected to more than double over the next 25 years, with the majority of the increase taking place in urban centers as people continue to migrate to the cities. Our work generally falls into the following areas:

- support innovative approaches to serve the underserved by working with local nonprofit organizations and self-help groups to provide advocacy, training and community coordination on water and sanitation-related issues;
- foster water sector reform by supporting municipal and utility operator-training workshops and other advisory activities within the water sector;
- strengthen local water associations as an agent of change by positioning local associations as resource centers for the respective water sector; and
- share lessons learned with other agencies and practitioners.

Our Water For Africa (WFA) initiative was one of the first attempts to meet the water and sanitation needs in 12 urban poor areas of five African countries - Kenya, Malawi, Tanzania, Uganda and Zambia. WFA has been successful with building capacity of the communities, nongovernmental organizations, and local governments to develop small scale, community-based solutions to drinking water, basic sanitation, and health and hygiene education challenges. Lessons learned from Phase I of WFA include:

- the urban poor pay much more for their water than in other areas of the same city;
- the urban poor are willing to organize and be advocates with their government officials to solve their own problems; and
- the urban poor are very motivated to use innovative means to carry out health and hygiene education so their neighbors understand how to reduce the incidence of water-related illnesses.

Many of the lessons learned would be appropriate in any large urban area in the world. WFA Phase I was supported by the US EPA and recently, we received a second grant from the EPA and the Conrad Hilton Foundation for Phase II. We will continue to work in the same five countries.

Latin America

Water For People began working in Latin America in 1992 (Bolivia-1992, Honduras-1994, Guatemala-1995). Our work in these countries support 28 to 40 rural communities each year, helping approximately 12,500 to 15,000 people annually obtain safe drinking water, sanitation services, and health and hygiene education.

Typical projects include:

- village-wide gravity water systems
- rain catchment systems

- spring captures and protection
- hand-dug wells
- storage tanks
- community clothes washing stations
- school hand washing stations
- family shower stations
- family latrines

To accomplish these projects WFP partners with local, indigenous organizations, and government and non-governmental water, sanitation and health organizations. These partner organizations in turn mentor recipient communities through project planning and decision making for their unique project. In addition to their ideas for the type of infrastructure they prefer, community residents also contribute locally available construction material, 'sweat' equity and equitably established tariffs to offset capital, operation and maintenance, and repair costs.

Post-project evaluations indicate that this model effectively nurtures a sense of system ownership for the completed project, and provide the community with valuable experience, confidence and skills to manage their own system and help other communities develop their systems with minimal or no outside assistance.

As partners manage projects, they gain valuable experience, confidence, and the necessary skills help develop future water systems without help from outside agencies. Communities are involved in project planning and decision-making, which nurtures a sense of ownership for completed projects. In this way WFP's mission is attained – helping people help themselves so projects are sustainable.

In addition to sustainable hardware infrastructure, WFP believes that health and hygiene education is a critical component to the work. WFP funds workshops and educational sessions and provides materials to complement rural construction efforts. In some instances, WFP funds the work of local health promoters on an ongoing basis. Experience indicates that without a strong health program, a water system alone is ineffective in combating water-related disease.

Over the last ten to thirteen years the local water committees have matured through the implementation of the project model and are now showing a strong desire for technical and managerial training. Consequently, WFP supports technical and managerial assistance on water-related topics by funding local NGO and government efforts. This has resulted in an increased comfort level with more technical treatment alternatives, such as the use of hypochlorination for disinfection, increased local hygiene training and education programs, and improved governance and tariff structures.

Conclusions

The challenges caused by rapid, unplanned growth in large urban areas are a special problem in all developing countries. In addressing urban sanitation concerns, Water For People would draw upon and expand a number of proven community-based solutions such as:

- construction of culturally- and technology-appropriate latrines, utilizing different designs to fit the needs of the communities, and the training on how to maintain and dispose of the waste materials properly;
- the safe reuse of gray water by utilizing the water for family gardens and pour-flush latrines;
- construction and maintenance of absorption pits and other low-tech on-site disposal technologies so wastewater can be safely re-introduced into the environment without impacting water supplies or creating other problems (cesspools – mosquitoes, other health hazards);
- implementation of community-based health and hygiene education so communities and elected officials learn the importance of safe local disposal practices of human and animal waste until proper sanitation systems can be developed by the local utility;
- facilitating discussions between communities and elected officials about longer-term solutions to keep wastewater from flowing untreated into rivers and streams;
- facilitating discussions between communities and elected officials about watershed management and river basin protection and amplifying the link between wastewater management and (drinking) water quality;
- working with communities to keep solid waste from accumulating and becoming vector attractants.

WFP can mobilize virtually any water resource skill from our volunteer pool to address urban and peri-urban sanitation and wastewater management issues. In keeping with our philosophy of sustainability, we would use several strategies for sharing information and experience and technology transfer including assessments, training, twinning and mentoring.