PHILADELPHIA HEROES IN THE GLOBAL FIGHT FOR CLEAN WATER AND SANITATION

Five Year Report

Philadelphia Global Water Initiative

“Five years and the potential is enormous. PGWI has the foundations to be a unique entity in the water and sanitation "space.” I recently spent a day at PGWI and was stunned at the engagement of their broad constituency, the powerful ideas and questions that clearly come from a group that takes its work seriously and wants to constantly improve. PGWI has particularly strong potential as it links a range of NGOs with engaged and passionate students who want to change the world. Field based work can come back into the class and be discussed and analyzed in ways that can lead to better work on the ground. Yes, might be unique…”

Ned Breslin
Water for People

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PHILADELPHIA HEROES IN THE GLOBAL FIGHT FOR CLEAN WATER AND SANITATION

A Report by the Philadelphia Global Water Initiative on Leadership by Philadelphia Area Organizations Who are Making Extraordinary Efforts to Help those in the Developing World

They come from diverse backgrounds but are joined by a common interest of helping people in developing countries find access to safe drinking water and adequate sanitation. They recognize that, around the world, preventable water-related problems claim 4000 lives each day and those that die are usually children. They also recognize that they have the expertise and the will to help alleviate this suffering. They are engineers, high school and university students, full-time professionals, retirees, health officials, lawyers, scientists, and members of the general public. Some come from government, some from academia, some from the business sector. Some have formal training in the water field and others have primarily honed their skills in the field in developing countries. This report is dedicated to these Philadelphia area "water heroes" and their usually all-volunteer, mostly unreported efforts across the world.

Philadelphia area organizations who work in the developing world build on Philadelphia's long history of excellence in water and sanitation dating back to the early 1800s. The Philadelphia Region is home to numerous government, academic, and business organizations who have been recognized for their leadership on water-related issues. In November 2006, area professionals and students from the University of Pennsylvania founded the Philadelphia Global Water Initiative [PGWI] to provide a platform for these organizations to collaborate on solutions to the global water crisis. There are over a dozen non-governmental organizations, several businesses, governmental organizations, and several universities in the PGWI network. They address water problems in numerous countries around the world [India, Cameroon, Kenya, Guatemala, Haiti, South Africa, and Afghanistan to name a few]. We believe that PGWI is unique in the breadth of its collaborative network in a geographic area and in its close collaboration with a major university, the University of Pennsylvania. In this report you will see snapshots of the work that these organizations have done and how you can help them.

In the coming years the PGWI network hopes to increase the number of projects in developing countries and to provide more educational opportunities to students at all levels, both here and abroad. Building on its fine efforts to date, the Philadelphia area has the capacity to become recognized around the world as a "Center of Excellence for Global Water and Sanitation". With this report we invite you to celebrate the leadership of our "water heroes", connect with the organizations in this report, and become involved in helping to use your expertise to save lives around the world.

The Board of The Philadelphia Global Water Initiative; Stanley L. Laskowski, President

"As a woman, [the] availability of piped water saved me the agony of trekking long distances, over 3 kilometers, to fetch water for domestic use. My back no longer aches due to carrying water nor do I drive donkeys to the river anymore. I have saved many hours which I now utilize in productive activities like tilling our family land, planting vegetable and fruits, in addition of washing clothes for my children. The economic state of my family and the community at large is now [improved]. Before, we used to loose many cows to leeches and people got admitted into hospitals over the same [issue with leeches] stuck in their throats, as a result of drinking water directly from rivers. In addition, water borne diseases, particularly typhoid, do not cause the deaths of many people as before, and diarrhea is now rare. Sale of cows and saved medical funds are used for school fees, food, and other family needs."

Miriam Kiplagat
Katumoi, Kenya
Age 56

A DRINK FOR TOMORROW

Contributer: Stephanie Weaver

Mission and Background

A Drink for Tomorrow's Founder Stephanie Weaver is pictured above with children from Little Angels Orphanage in Lesotho, Africa, where ADFT funded a rainwater harvesting system.

A Drink for Tomorrow (ADFT) is a volunteer-run 501(c)(3) non-profit organization that funds the construction of sustainable clean water and sanitation projects in the developing world. ADFT uses drinks and the beverage industry to raise awareness of this dire situation and generate funds through business partnerships, promotions, and events with community groups and the general public, providing people with simple ways to contribute to a solution. ADFT's business partners include restaurants and bars in Southern New Jersey and Philadelphia, a retail wine consortium, as well as a maritime painter and a water-heating equipment manufacturer, among others. Furthermore, ADFT holds two annual events: a fundraiser in the spring and a 6K Run for Clean Water (to raise awareness of the average distance women and children in impoverished communities travel to collect water daily) in the fall.

ADFT channels this critical funding to on-the-ground partner organizations whose experts implement and maintain water projects and teach sanitary habits to community members, benefiting those among the nearly one billion people worldwide who lack access to clean water.

Success Story

In November of 2009, ADFT funded its first clean water project, partnering with Project Well and Peer Water Exchange to construct a dug-well in West Bengal, India. In West Bengal, millions of people are exposed to poisonous levels of arsenic in their groundwater. The tasteless, odorless metalloid occurs naturally, in a dissolved state, in groundwater aquifers in the region. Furthermore, with 220,000 people showing symptoms of arsenic contamination, the situation has been coined "the biggest arsenic calamity in the world" by the British Medical Journal.

Arsenic causes cancers of the lung, bladder, kidney, liver, and skin as well as cardiovascular, respiratory, reproductive, neurological, and dermal effects. As it is an odorless, tasteless poison, a person unknowingly dramatically increases the likelihood of developing cancer with each sip of contaminated water. Those who are exposed to arsenic *in utero* and during early childhood may develop diseases such as acute myocardial infarction, childhood liver cancer, and bronchiectasis, a chronic obstructive pulmonary disease.

In the Deganga block in the district of North 24 Parganas, where ADFT funded the well, 150 people had died from arsenic poisoning. ADFT's well is now providing clean water to this community of 140 people, and will continue to do so for 20-30 years. ADFT's funds will also be used to educate community members about the harmful effects of arsenic and train them in well repair and how to disinfect the water through a chlorination process, to ensure sustainability of the well. This project used

environmentally sound materials and there will be consistent follow-up to ensure that the well continues to function properly.

As of Summer 2011, ADFT has subsequently funded water projects in Lesotho, Botswana, Sierra Leone, Haiti, Nicaragua, Guatemala, and an additional one in India.

Water flowing from the very first well A Drink for Tomorrow funded in West Bengal, India, which provides 140 people water free from arsenic contamination.

Vision For the Future

Since its creation three years ago, ADFT has enjoyed remarkable growth. In the future, the organization will continue to expand its business partnerships and increase its donor base, as well as transition from volunteer-run to professionally-staffed and improve the quality of relationships with implementing partners.

More importantly, though, ADFT will take concrete steps to ensure the long-term sustainability of its projects and encourage solidarity between donors and the communities served. ADFT will use its financial resources to leverage local funding for water and sanitation projects and will empower local leaders to take an active role in solving water and sanitation issues at the grassroots level. At the same time, ADFT will bring together donor communities and communities served via various means of communication. By standing in solidarity with one another, we will do our part to end the global water/ sanitation crisis.

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Arun K. Deb, Ph.D,P.E.

Contributer: Arun K. Deb
Board Member, PGWI
Retired Vice President, Weston Solutions, Inc.
Former Board Member, Water for People

Mission and Background

While working for Weston Solutions, Inc., Dr. Arun Deb started his volunteering activities more than 20 years back with a goal to help poor people of developing countries in providing them safe drinking water and good sanitation. Many of those projects tie into volunteer activities for Water For People.

In early 1990s, Deb initiated WFP projects to bring safe drinking water to about 10 schools with nearly 1,000 students each. Deb, who has served two terms on the Water For People board, is the man behind the project in India to remove arsenic from drinking water. Deb spends several months each year in Kolkata, India.

When he learned of the huge numbers of villagers suffering from arsenic poisoning caused by contaminated groundwater, Deb helped raise $10,000 with the help of PA Section of WFP for a research grant to support the Bengal Engineering and Science University in designing an arsenic-removal process that would not require electricity.

Now that the project is under way for the last 14 years, Deb's reward consists of the responses from villagers during his visits to India that they are so proud of their arsenic-removal unit.

Arun Deb demonstrated his passion for delivering safe drinking water and improving the quality of life. At present, as a Board Member of PGWI, Dr. Deb is involved in a safe drinking water supply project for a girl's school in West Bengal.

Safe drinking water stand at a school in West Bengal, India. Supported by Water For People.

Water for People High School Latrine Project, East Midnapore, West Bengal.

Success Story: Arsenic Removal in Rural Water Supply
West Bengal, India

Dr. Arun Deb as a volunteer of Water For People, was pioneer in raising funds, organizing research to develop appropriate sustainable technology, suitable for hand pumps of rural villages of West Bengal**.** The project supported installation of many arsenic removal units in various districts of rural West Bengal. He with the help of Bengal Engineering and Science University, organized villagers support, developed village level institutions, managed by the consumers to properly maintain these arsenic removal units. This project is a real success and is presently continuing. In 1996, the growing arsenic poisoning of drinking water drawn from the underground in the Indian subcontinent came to notice of Arun Deb. At that point, he contacted several academicians in U.S.A. and India. Primarily as a conceptual planner and facilitator, and representative of Water For People (WFP), the goal was to develop an effective project appropriate for rural Bengal with partnership with Bengal Engineering and Science University (BESU), Kolkata, and Lehigh University of USA and find a way to provide arsenic-

safe water to villagers in remote areas with no other source of drinking water. Now nearly 14 years later, that modest beginning has exceeded all expectations.

Currently there are nearly 200 community based well-head arsenic removal systems in remote villages that routinely cater safe drinking water to nearly 200,000 villagers. Most importantly, these arsenic treatment units are run, financed and operated by villagers themselves including women. The units are socially acceptable by the villagers; sustainable, all made of indigenous materials and the treatment process runs without electricity and does not require addition of external chemicals. The partnership between WFP, BESU in India and Lehigh University has come a long way and the project is still growing without any governmental assistance.

For its sustainable engineering approach, the project has received several awards, namely, 2005 Mondialogo award from UNESCO and Daimler-Chrysler; 2007 Grainger Silver award from the National Academy of Engineering (NAE); 2008 Dhirubhai Ambani award from the Institution of Chemical Engineers (IChemE) in the United Kingdom; and 2008 American Society of Civil Engineers' one of the five best civil engineering projects of 2007. This is still a live project with continuous improvement; larger scale treatment systems are currently being installed in several schools, where drinking water is laced with unacceptable level of arsenic, helping many students.

Water for People Arsenic Treatment Plat at Maslandpur, West Bengal, India. Number of Consumer Family - 200.

Water for People project - Arsenic treated water storage tank in a high school in West Bengal.

Impact of water and sanitation system in a school in East Madnapore, West Bengal - increase in female students attendance.

A girl is carrying drinking water to home after school.

Vision For the Future

Dr. Arun Deb focused his vision to improve the lives of poor villagers of West Bengal, India by providing safe drinking water and sanitation, education, and primary health services. Dr. Deb started with two villages in West Bengal with the objective to provide help in education and health services. With safe drinking water and sanitation services, and primary health services, children will be healthy, and as a result education standard will also improve. Vision for Dr. Deb all children will complete high school education and will have good health.

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ENGINEERS WITHOUT BORDERS (UNIVERSITY OF PENNSYLVANIA)

Contributer: Soh Nagano

Mission and Background

PennEWB team members work with Seta, the executive secretary of MQLIF, to properly measure the pit dimensions.

PennEWB team members work with local masons to mix the concrete that will be used to pour the foundation of the latrines.

Penn Engineers Without Borders (PennEWB) is University of Pennsylvania's student chapter of Engineers Without Borders, a non-profit humanitarian organization with hundreds of student and professional chapters across the United States.

PennEWB's mission is to "support community-driven development programs around the world by collaborating with local communities to design and implement sustainable engineering projects, while creating transformative experiences and responsible leaders." In line with this, PennEWB has worked internationally to catalyze and enable small scale water and sanitation projects. In the last 7 years, our projects have ranged in geography and context, from the implementation of a gravity-fed spring water distribution system in Terreritos, Honduras, to the recent construction of latrines in the Bome Valley of Cameroon. Our upcoming implementation in Guatemala will involve the protection of springs as the first step to delivering a network for sustainable irrigation to rural farmers.

Furthermore, integral to our mission and vision is coupling our international work with raising awareness and interest in sustainable development locally. Through our many educational and promotional events, the organization has shown its strong dedication to helping students and other members of our immediate community in Philadelphia gain a richer global perspective through exposure to many of the critical water and sanitation problems that exist around the world today.

Success Story

PennEWB has initiated three successful projects in the Bome Valley Region of Northwest Cameroon. Over the course of our 5 year involvement in this region, PennEWB has worked to address issues in water and sanitation through the implementation of water distribution systems in Kob/Tudig and Gundom, as well as the construction of latrines in Mbengwi.

The need to improve access to clean drinking water initially brought PennEWB to this region of Cameroon in 2007. It was found that the lack of access to clean water and adequate sanitation were particularly impactful to the quality of life in this area. After an assessment trip in 2007, and collaboration with the community, nearby springs were developed and a water distribution system built to bring water to the village of Kob/Tudig in 2008.

We next identified Gundom as a community needing a clean, reliable supply of water through our collaborative efforts with PGWI. Immediately after our 2007 assessment trip to Kob/Tudig, a PGWI team studied the Bome Valley in great detail. Out of that PGWI project, came an understanding that Gundom would be an appropriate community for a second PennEWB water project in the region. We followed up with an assessment trip and a subsequent implementation to Gundom in 2009.

In order to ensure maximum impact from the implementation of these water systems, it was integral to our mission to address the many sanitation and hygiene issues that also contributed heavily to the high levels of water borne diseases. To this end, each project had an educational component to address the need for changes in hygienic behavior. Furthermore, in the most recent phase of the project, implemented in the January of 2011, PennEWB worked at two community schools in Mbengwi to construct latrines.

One of the most important criteria that we use to measure our projects' success is sustainability, and this is one area where we have been particularly successful in the past. It is our hope that the emphasis that we place on community engagement and buy-in will ensure that these projects will continue to be maintained and utilized for years to come.

PennEWB team members create a rebar grid to reinforce the concrete slab floor.

Vision For the Future

Over the next few years, we envision that PennEWB will grow both through additional initiatives in the different project areas, and through a deepening of our relationship with partners, including PGWI.

We plan to increase the current number of international projects, further develop our local initiatives, and continue to raise awareness of water and sanitation issues through marketing initiatives and events.

Continued collaboration with our partners is extremely important for our organization. Looking into the future, top priorities in our relationship with PGWI are the continued collaboration in identifying new projects, mentorship of our students by PGWI professionals, and professional development events, to allow PennEWB students to explore the professional path taken by the members of PGWI.

PennEWB is extremely appreciative of the success that it has had in the past thanks to the dedication of its own members and external support, and hope that as a community, we can continue to drive forward impactful change in the future.

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ENGINEERS WITHOUT BORDERS (USA)

ENGINEERS WITHOUT BORDERS-USA
MID-ATLANTIC PROFESSIONAL CHAPTER

Contributer: Walt Walker

Mission and Background

EWB-MAP member Bob DiFilippo with children of Rugerero, Rwanda; the site of our latrine construction project.

Engineers Without Borders USA (EWB-USA) is an internationally recognized, non-profit humanitarian organization which supports community-driven development programs worldwide by collaborating with local partners to design and implement sustainable engineering projects, while creating transformative experiences and responsible leaders

The Philadelphia regional chapter of EWB-USA, Mid-Atlantic Professionals (EWB-MAP), was established in September 2005. Since its inception, EWB-MAP has worked on establishing its unique vision, finding strong leaders, growing membership and developing fundraising to enable success. EWB-MAP currently has water & sanitation projects established in Rwanda, El Salvador, and the Philippines. EWB-MAP has also strived to maintain a presence in the Philadelphia region through community service projects driven to eliminate urban blight.

Success Story: Philippines “Water for Life” Project

The village of Apatut, located about 200 miles northwest of Manila, is in need of a potable water supply. Most residents currently obtain drinking water directly from shallow wells within the village using difficult manual pumps. EWB-MAP traveled on an assessment trip in March 2010 to gather design data. During the trip, current drinking water sources were tested and found to be contaminated with fecal coliform. Since the assessment trip, EWB-MAP has developed a preliminary design for a water supply system consisting of a deep well, submersible pump, water storage tank, water treatment and gravity-fed pipeline. EWB-MAP has been approved by EWB-USA to

EWB-MAP members in Apatut, Philippines for project conference with community leaders.

install the well. The team has raised sufficient funds to install the well and is currently awaiting the drilling permit. Well construction is scheduled for the Fall of 2011, after which time, the team will finalize the design of the remainder of the components. Construction of the rest of the system is planned for 2012. Apatut has developed a Water Cooperative that will oversee operation and maintenance of the system, as well as administer and collect fees for water usage. The Cooperative and the community at-large will be trained by EWBMAP on system usage and maintenance, as well as water conservation and good sanitation practices. EWB-MAP's largest partner in this effort is Rotary Club, with chapters in the USA and the Philippines contributing to the project.

Surveying of areas for potential pipeline layout with people of Apatut community.

Vision For the Future

EWB-MAP's vision for the future is for successful implementation of our proposed design projects, several phases of which are planned for between Fall 2011 and Spring 2012. We aim for at least a five-year commitment with each community to ensure the system is sustainable, which also ensures that the design is feasible for implementation in adjacent areas. Completion of ventilated improved pit (VIP) latrines in Rwanda has proved to be sustainable and sanitation-improving for the people of Rugerero.

EWB-MAP hopes to continue relationships with host NGOs such as Rotary and Red Cross who are essential in communication with the project communities, as well as instrumental in assisting the chapter to secure funds for our designs.

Our organization continues to provide mentoring to EWB student chapters in the Greater Philadelphia region for technical assistance with their own design projects, in addition to helping them develop organizational skills useful as professionals and/or future EWB-MAP leaders after graduation.. EWB-MAP will also maintain its relationship with PGWI for collaborative efforts in promoting the global water and sanitation issues. Representing the Philadelphia area, we also strongly believe community outreach is an important part of our vision "without borders"; we will continue to move forward to help making Philadelphia green and beautiful.

To find our more:

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KEIYO SOY MINISTRIES

Contributer: Dr. Elijah Korich

Mission and Background

Building a water tank

Keiyo Soy ministries is a 501(c)(3) organization dedicated to confronting the harsh reality of many children in many schools in Kerio Valley, Rift Valley Kenya, who live and walk to school without any access to safe drinking water. These Children need clean water, sanitation facilities and hygiene education to be able to learn in order to break the circle of poverty and ravages of water borne diseases. KSM has long understood the need and has found the solutions that are affordable, achievable and sustainable.

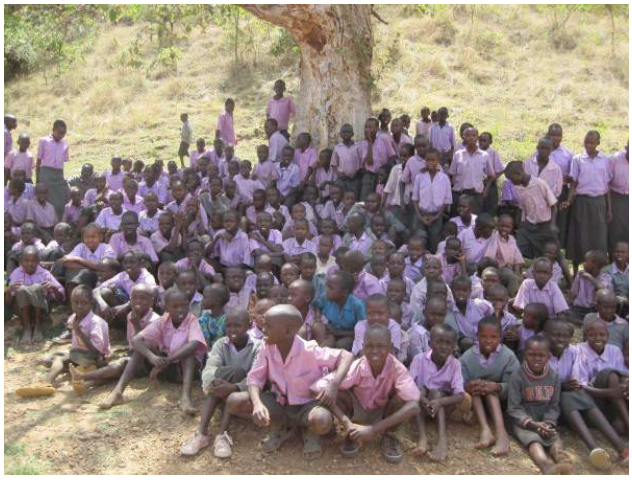
Success Story

How will Africa break the circle of poverty and starvations if its children waste precious school hours looking for water which will cause diarrhea and lose more days of school? If they don't die of diseases they will die of starvation. This is what is driving the Board of Directors of Keiyo Soy Ministries to seek help so that we can speed up the progress of making this precious commodity accessible to many schools in Rift Valley Kenya.

Dedicating the first water tank

Keiyo Soy Ministries has made and achieved unprecedented progress in the last ten years. It has been observed that most water projects in developing world fail within the first five years. KSM has passed the test of time and constructed the equivalent of 18-mile pipeline gravity based system from the mountain to villages and schools, completed three concrete water towers serving 6 schools, 6 villages and three shopping centers. We have supplied

several schools with water storage tanks and rainwater harvesting systems. Over four thousand people are now having access to safe drinking water. We have made monumental progress considering the fact that we have only worked with a volunteer base and working out of the founder's kitchen table. We have tasted success and we now know what is possible and the thousands of lives we could safe. The task ahead of us is too monumental and we cannot stop at saving just four thousand students. We need to increase capacity building and continue to double the number of schools and communities that we now serve. We are now turning to purification systems and Capacity building to enable the Organization to move forward fast. This is an Organization obsessed not only with achieving results but also driven by desire to see community participation/ownership, integrity and aggressive promotion of gender equality. Development of local resources and community participatory to meet community needs, is at the core of our agenda and a means to maintaining sustainability.



Some of the children who are benefiting from KSM's water projects

Vision For the Future

We are limited only by time and funding. We want to enable 8 schools a year to have access to clean, safe, drinking water. That means an average of 400 children a school, 3,200 children a year, parents and the surrounding communities, will benefit from:

*Increased number of students graduating on time and move on to higher education
*Decreased number deaths of children caused by malaria and diarrhea
*More hours invested in economic work than spent on searching for water
*Overall peace among the communities as they become productive and build stable economies

To find our more:

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Spring of Hope

Contributer: Brittany Young

Mission and Background

Founded in 2007, A Spring of Hope is a nonprofit small NGO that performs schools-based programming in African schools to combat poverty. ASOH's primary goal is to provide clean drinking water to children in Sub-Saharan African schools to improve community perception of schools and education and to dramatically improve learning environments. We believe in providing support exclusively at schools, which must become valued community centers in order to increase school attendance and community success. We believe that the true driving forces of change are already at schools: passionate teachers and administrators. Poverty must be fought with sustainable investments that encourage the involvement of the people being helped, who must be keen on helping themselves and making greater change. For this reason, we provide gardening training with our partners so a school can maximize on the water's vast utility, raise funds, and eventually be able to maintain the long-term operation of the water well over which they assert ownership. Our long-term mission is to provide schools with the necessary tools to be independent from aid.

Success Story

During the summer of 2005, Brittany Young and her mother Joanne Young traveled to South Africa. While staying in Limpopo, the two decided to visit a local rural school. When they expected about forty children to greet them, over 1,200 fit into small and dirty classrooms, eager to learn. Upon arriving at Beretta, located in the center of the poorest province in South Africa, Limpopo, Brittany and Joanne were shocked to learn the school did not have running water.

The lack of nearby running water made life at Beretta extremely difficult. The gardens, their only source of food for the children, grew exclusively during the rainy seasons. Volunteer mothers endured miles of walking to retrieve a pail of water from a government pump to prepare lunch for the children. Without operating flush toilets, students were forced to use unsanitary pits and were not able to wash their hands to keep from spreading illnesses.

It was apparent the lack of water had deleterious effects on the students and faculty and obstructed the development of healthy, educated, and thriving children. Brittany was so moved and saddened by Beretta's conditions, that she decided

she would do all she could to make a difference in the students' lives. When she began her freshman year of high school the fall of 2005, she began fundraisers and eventually raised over $10,000.

A well was completed at Beretta Primary in May of 2006. Since then, Beretta Primary has served as the primary model of success for A Spring of Hope, which was later founded in 2007 and has grown into a professional NGO with twenty well projects as of July 2011. Beretta Primary has capitalized on their water investment by expanding their tremendous garden and selling their surplus fruits and vegetables to the community. The school won a $10,000 Rand prize for their garden in 2010 and continues to exhibit incredible entrepreneurship and drive to improve the quality of life and

Vision For the Future

Since its humble founding in 2007, A Spring of Hope has matured and recognizes the need for change in the water development community. Success, the organization believes, does not come from the quantity of wells drilled in a given year. ASOH believes in simply providing schools the necessary investments needed to create its own success. Thus, ASOH cannot only be a water organization, but also an organization that can provide entrepreneurial advising for schools. In the summer of 2010, A Spring of Hope received a $130,000 grant from the JP Morgan Chase Foundation, its largest grant to date. ASOH plans to allocate some of its grant money in researching and gathering quantitative success indicators, which can help the organization determine the next course of action. ASOH also plans to work with local authority and government more closely to assist in transferring ownership from ASOH

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TRAVELING MERCIES

Contributer: ???????

Mission and Background

Traveling Mercies was founded in 2007 by Aldo Magazzeni to help people in need throughout the world. This 501 (c) (3) organization builds on Aldo's varied experiences that includes work with drinking water projects in Afghanistan; assistance after natural disasters such as Hurricane Katrina and the Haiti earthquake; support of women's organizations in Afghanistan; assistance with HIV/AIDs projects in Kenya and Ethiopia; and humanitarian work in many other countries. Traveling Mercies' purpose is dedicated to helping others, while creating a vehicle to remove barriers between cultures so that individuals can share their strengths, assets and blessings with each other. Human equality is most important and can only be achieved through compassion, love and sharing our life experiences.

Aldo's photographs of the people of Afghanistan and Kenya are exhibited within the tri-state area. He also speaks to various organizations, schools and communities to share his experiences and to create awareness, as well as donations for planned projects.

Success Story: Syokithumbi Farmers Self Help Project

[Southeast Kenya in the District of Kitui West]

This region, and in particular this community, is well known to Traveling Mercies, which completed several projects over four years in the region, including a self- sustaining village with a large water system. Today this village cares for 900 HIV orphans and their grandparents. In 2009, a water system was built at a public school in Nairobi and today hundreds of children and their families have clean drinkable water.

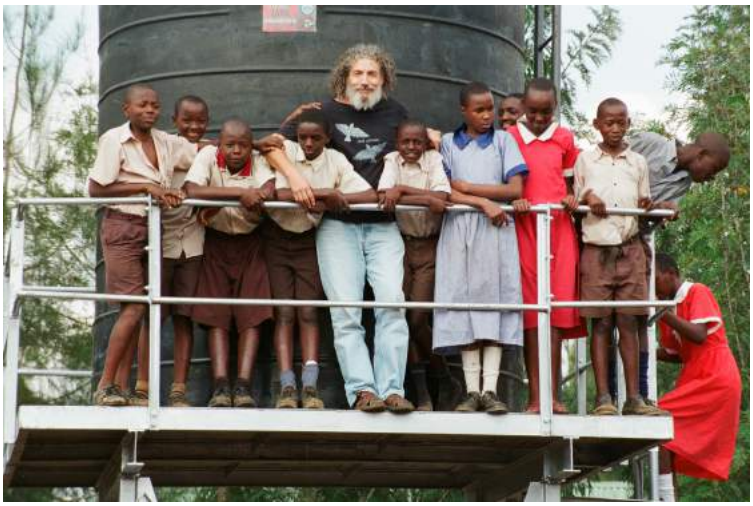
This innovative new project is well- received by all the communities and government officials. It was designed for the purpose of helping hundreds of families who reside in a drought affected area. A plan called the Syokithumbi Farmers Self Help (A community based organization) was developed by the people. The area has many villages, but we decided that Phase 1 would include 20 small villages with approximately 100 total families and more than

800 people. The plan is to create a cooperative where a water well would be installed, a community meeting house, storage building, and a greenhouse constructed, and a farming scheme to grow food on 25 acres of common ground using drip irrigation. Since the area does not have electricity a solar-power system will be used.

The people have said "We no longer have enough food to feed our children, the animals are dying and now we must go to town and receive charity! This lowers us as a community and family, when we cannot care for ourselves." This is one of the first co-op associations formed in this country. It would be too costly to install many wells and more difficult to manage them, but as a co-op, managed by the Association of Elders, much more can be accomplished.

The well has been installed and has been granted a certificate to operate. The area for the buildings, the well storage tank, solar systems, fencing and farming scheme is in process. This will be self-sustaining because more food will be raised than required for the Villages. The plan is to start a market in the Town of Kitui and sell the surplus. The program will be run by the women and, at Aldo's request, they agreed that some of the proceeds would be for the widows of the Villages that are in special need.

Over 60% of the $60,000 cost of the project has been raised and your help is need to raise an additional $25,000. Some wonderful assistance has been received from Rotaries, schools, and church groups. Your help will be directly made known to the people and as they always say, "thank the good people for helping us to survive so our children can be healthy, go to school and one day help



Vision For the Future

Traveling Mercies looks forward to helping those in need around the world and working in collaboration with the PGWI network of organizations on water and sanitation issues around the world.

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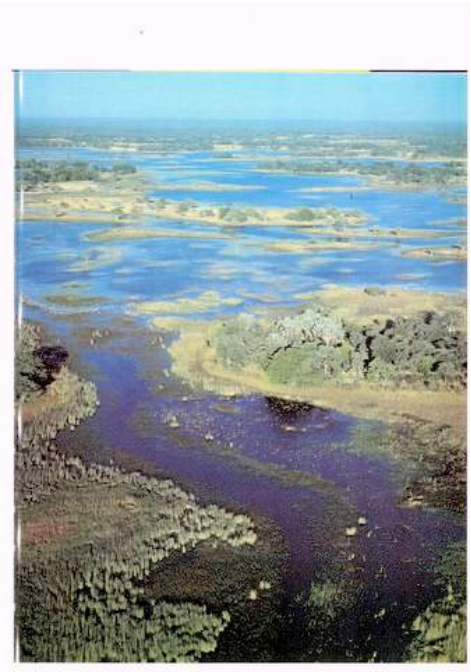
Contributer: Vincent Uhl



Okavango Delta, Botswana

Mission and Background

UHL & Associates, Inc. consults to private industry, municipalities, law firms, consulting firms, and international clients on all projects with elements of water resources planning, development, management, protection, assessment and remediation. The range of services includes:

- Water resources planning, exploration, development and management
- Municipal water utility services
- Sustainability assessments, planning, and allocation
- Climate change analysis
- Litigation support and expert testimony
- International services

The firm provides a comprehensive range of services in water resources planning, development, resource management, and strategic planning. Our range of geographic experience is from the humid northeast United States to the arid Kalahari Desert and northern Afghanistan. Our projects have been varied from production wells for industry and municipal water utility authorities to large regional development programs for potable water supplies and large-scale irrigation projects.

UHL & Associates has completed projects in widespread parts of the world including southern, eastern and west Africa; the Middle East, Asia and Latin America. The Firm provides services to international governments, non-governmental organizations (NGOs), USAID contractors, attorneys and private corporations. These projects have involved large regional groundwater resource exploration and water supply development; village and peri-urban area water supply assessment and development of new water sources (groundwater and springs); country-wide water resource quantity studies; water supply system costing; well field management; and training/capacity building.

Success Story: Maun Groundwater Development Project

The joint venture of UHL & Associates, Inc. and Water Resources Consultants (Pty) Ltd. was contracted by the Government of Botswana Department of Water Affairs to conduct a groundwater resource assessment and development feasibility evaluation for a 5000 square mile area in northwest Botswana with the objective of securing a safe sustainable source of water supply for the town of Maun until the year 2030 and beyond. The project area is on the fringes of the Okavango Delta, one of the largest inland deltas in the world and was initiated after a major dam project proposed by the Snowy Mountain Engineering Corporation (SMEC) on behalf of the government was terminated after a critical review by the IUCN

Test Well Drill Site, Near the Boro River, Botswana

(International Union for the Conservation of Nature). The project area is on the fringes of the Kalahari Desert and prior to the project, freshwater resources were thought to be extremely limited ad confined to near perennial and seasonal water courses.

UHL and WRC headed the project team comprised of 30 technical experts in the areas of remote sensing, vegetation analysis, geomorphology, structural geology, surface water hydrology, hydro-geochemistry, geology, geophysics, hydrogeology, isotopes, artificial recharge, economics, cost engineering, environmental impacts, and ecology. The project resulted in the identification of several new major aquifer systems that are being utilized for water supply to Maun and the region.

Principal Technical Activities

- Groundwater exploration using airborne geophysics (magnetic and electromagnetic); satellite imagery interpretation, and surface geophysical studies to identify areas for field drilling exploration.
- Groundwater resource investigation through the installation of 50 test wells and aquifer pumping tests. Two deep bedrock wells were installed to depths of 1000 and 250 meters to evaluate groundwater development potential and water quality conditions in deep bedrock aquifer system.
- Groundwater development feasibility and sustainability analysis through aquifer modeling; recharge analysis; and groundwater-surface water evaluation analyses.
- Artificial recharge feasibility pilot study; groundwater modeling; isotope studies; and seismic monitoring.
- Installation of production wellfields and more detailed sustainability assessments.
- Evaluation of the feasibility of horizontal collector well applications.

Vision For the Future

There are a wide variety of entry points for future initiatives:

- **WASH Programs in Peri-Urban Areas**: The least served areas globally are the huge peri-urban areas around the megacities in the Middle East, Asia and Africa. Hundreds of millions of people are off the grid of urban utility networks and dependent upon contaminated sources for drinking water provision. Sanitation facilities are generally non-existent.
- **Water Resources Management:** The depletion of non-renewable aquifers and aquifers with limited recharge/replenishment is a key area that requires the water community's attention in the 21st century. Countries like Yemen, Jordan, India, China, and others have seen a rapid depletion of fresh groundwater reserves over the past decades. Workable cooperative regulatory management initiatives are the preeminent challenge.

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Water for Waslala

Contributer: Nora Pillard

Mission and Background

Founded in 2004, the mission of Water for Waslala (WfW) is to provide the 45,000 residents of Waslala, Nicaragua with clean drinking water. The organization is dedicated to providing the funds and technical expertise needed to construct cost-effective, sustainable potable water systems in Waslala that improve public health, increase educational attainment, and facilitate economic development.

Waslalans, not temporary US volunteers, are in charge of designing, building, and maintaining their own water systems, which fosters community organization, empowerment, and sustainability. WfW works in partnership with Villanova University's Engineering and Nursing Departments. Professors and students visit Waslala twice a year to host training workshops, inspect systems, and foster critical health & hygiene education. Our access to state-of-the-art academic resources ensures that our systems are designed, built, used, and maintained according to best practices.

Water for Waslala's six-member Board of Directors and student volunteers from Villanova University raise the funds needed to construct potable water systems in Waslala. Most of our funds come from foundation grants, grassroots fundraisers in schools and churches, and community events like the annual Walk for Water 5K at Villanova University. Despite the fact that WfW's Board and student volunteers have full-time jobs or classes, their genuine passion for reducing poverty commits them to dedicating their free time to help the Waslalan people access the clean water they deserve.

Success Story

To date, Water for Waslala has worked with 13 Waslalan villages to implement spring-based, gravity-fed water systems that supply clean drinking water to over 3,000 Waslalans each day. However our success as an organization is not simply based on how many systems have successfully been constructed; rather true success is achieved when the systems continue to function five, 10, 20, and 50 years after the water begins flowing.

Water for Waslala's local project management team works each village throughout the project lifecycle to ensure that our efforts are sustainable. For our latest project in a village named El Guabo, our team held dozens of meetings with the community's 250 members to set up a formal Water System Management Committee to determine a reasonable yet sustainable tariff structure and train the community's water system maintenance leader. After the system was designed and approved by the community, each water system beneficiary committed in writing to paying a monthly tariff to support

the community maintenance fund. By the start of construction the community raised and deposited $1,000 or roughly five percent of the total system construction cost.

During the six month construction process community members worked multiple eight-hour shifts per week to reforest the watershed and dig the 5.4km pipeline trench. This process helped foster a sense of pride and ownership of the water system, which is critical to ensuring that the system will be maintained over time. The system was completed in July 2011, and all 250 beneficiaries can now walk outside their home, turn on their tap-stand and take a drink of clean water supplied by the natural spring five km away.

Though the system construction process is complete, our work in El Guabo has only just begun. Over the next several years our project management team will survey the beneficiaries of the water systems in order to measure the impact on their health, educational, and economic outcomes. In addition our team will conduct health and hygiene workshops and conferences with other villages to communicate best practices and resolve issues.

Vision For the Future

Our primary goal is to ultimately provide every person in Waslala with clean drinking water. We have helped over 3,000 Waslalans gain access to clean water; however, we have tens of thousands still to serve. By cultivating partnerships and our donor base, we hope to accelerate our ability to fund and construct water systems in Waslala.

We look forward to working with PGWI members to learn about their respective projects and organizations. In working together, we believe we can help to advance our collective cause to provide clean water to as many people around the globe as possible.

With seven years experience to draw from, we can share what has worked for us (and what hasn't). We are especially looking forward to sitting at the table with PGWI members to discuss this year's focus on performance indicators. At the end of the day, it's the sustained access to clean water that matters more than anything else.

To find our more:

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Other Organizations
Coffee for Water
Delaware River Basin Commission
Pennoni
Rotary
University of Sciences
UNAGP
Wilkes University

Education on Water and Sanitation

"As I am a frequent traveler, it is always interesting to note the perception that host countries have about the developing world in general and my own country Sri Lanka in particular. I find too often that there isn't much curiosity about the rest of the world in many Americans. Less so than in Europe anyway. But developing countries such as Sri Lanka has had more contact with Europe (Sri Lanka has been colonized by the English, Dutch and Portuguese). I see a huge lack of information about developing countries in many Americans, unfortunately even among some development practioners.

That is the great value added in the PGWI mission for addressing water/sanitation issues in the developing world – PGWI has a strong anchorage in University of Pennsylvania and can further develop into being a conduit of information and interface with the developing world and USA. PGWI members display and strong academic curiosity balanced by empathy as they continue to interact with parters in the developing world.

These interactions are not entirely one way flows. NetWwater is a small but well networked Sri Lankan organization of women water professionals has been instrumental in getting UPenn students and PGWI represented in the World Water Forum 5 in Istanbul. This serendipitous connection continued with PGWI supporting rehabilitation of school sanitation, was further strengthened by a UPenn visit to Sri Lanka and is now blossoming into a student exchange.

Hands continue to reach out across the water!"

Kusum Athukorala
Chairperson, NetWWater

Part of the mission of PGWI is to educate and raise awareness of the global water and sanitation crisis. Many members of the PGWI network have been leaders in this area. This education takes many forms including the state-of-the-art Fairmount Water Works Interpretive Center operated by the City of Philadelphia, graduate courses and Conferences at the University of Pennsylvania, and presentations at local schools and civic associations. The following are a few examples of these activities.

- Fairmount Water Works Interpretive Center
- Abington High School and H2O For Life
- University of Pennsylvania
- Area High School students sponsoring projects
- Hassan Ammar on outreach to schools in the area

Research:

Researchers from PGWI and the University of Pennsylvania is undertaking an initiative on the important area of performance indicators at water and sanitation projects in developing countries. The management adage of "you manage what you measure" is especially appropriate since the literature contains many stories about the large number of projects that fail after only a few years in operation. The idea of indentifying the most important measures of success [ie, performance indicators] is getting increasing attention from donors and project managers who want to ensure that their projects are sustainable into the future. The research team of University of Pennsylvania students and other independent researchers are currently surveying national organizations and members of the PGWI network to determine what indicators they are currently using to measure success at water and sanitation projects in the developing world. Connections have been made with other organizations doing research on these issues and the researchers would be interested in talking to other parties who may want to collaborate on these issues. Performance Indicators will also be the theme of a major PGWI Conference to be held in the Spring of 2012. For more information on this research please contact Stan Laskowski, PGWI President, at laskowski6@aol.com .

Picture from left to right: Stan Laskowski and UPenn students at a school in Sri Lanka; Classroom in Sri Lanka; UPenn students, Stan Laskowski, and Kusum Athukorala at the 5th World Water Forum, Istanbul, Turkey

University of Pennsylvania

Mission and Background

The University of Pennsylvania, founded by Benjamin Franklin, and consistently ranked among the top 10 universities in the USA, has over 20,000 students from around the world. Its twelve schools are all directly or indirectly involved in environmental and/or health issues and many of these schools teach courses related to global water, sanitation, and/or health issues. The PGWI network has a unique relationship with Penn. PGWI Board members Christiaan Morssink, Stan Laskowski, and Tony Sauder teach graduate courses related to global water and sanitation in the Medical School, the School of Arts and Science and the School of Engineering and Applied Science respectively. Other Board members are often guest lecturers in these courses. Programs such as the Professional masters programs in the Earth and Environmental Science Department and the Initiative for Global Environmental Leadership at the Wharton School have been steadfast supporters of PGWI since its inception. PGWI also sponsors an annual Conference on water and sanitation issues with local, national, and international participants and speakers/panelists from the United Nations, US Government, leading NGOs, and academia. PGWI collaborates with campus organizations involved in water and sanitation. Two examples include the Engineers Without Borders Chapter at Penn and A Spring of Hope, an NGO founded by Penn student Brittany Young. Penn students have been an instrumental part of the success of the PGWI network. Over the last five years dozens of these students have provided leadership in organizing conferences, designing websites, speaking at local schools, helping with fundraising events, writing newsletters, and numerous other activities. Upon graduation many of these students have utilized their experiences and have moved into responsible positions in the environmental field.

Success Story

Each year Penn students have opportunities to work on water, sanitation, and public health projects abroad. During the past few years they have worked in the field on projects in many places around the world, including in Africa [eg, Cameroon, Kenya, Rwanda], Central America [eg, Guatemala, Honduras], and Asia [India and Sri Lanka]. Related opportunities to understand water sciences are available through the Earth and Environmental Studies Department [eg, research in Puerto Rico]. These projects are typically co-lead by Penn instructors, and/or professionals in the PGWI network [eg, Engineers Without Borders, Pennoni Associates, and Uhl Baron and Rana Associates].

Students also have opportunities to attend international conferences with Penn instructors including the annual Stockholm World Water Week Conference and the triennial World Water Forum. Supported by funding from Penn's Department of Earth and Environmental Science, in 2009, at the World Water Forum in Istanbul, Penn students had the honor of being the only university students selected to lead a 90 minute program. In January 2011 Penn students participated in a conference in Kolkata sponsored by the Bengal Engineering and Science University and the University of Pennsylvania.

Given Penn's advantageous location between the United Nation in New York City and Washington ,DC, Penn students also participate in class trips to the UN and to US agencies [State, USAID, USEPA] in DC where they hear directly from policy makers.

Currently Penn students, with guidance from Stan Laskowski, PGWI President, and Dr. Fred Scatena, Earth and Environmental Science Department Chairman, have begun research into performance indicators at water and sanitation projects in the developing world. Also being investigated with the Initiative for Global Environmental Leadership at Wharton is a possible research program on issues related to business and water.

Vision For the Future

Penn hopes to continue to expand it education and research in the area of water, sanitation, and health. It hope to continue to offer its students excellent classroom learning, practical experiences in the field, and leadership opportunities through participation with PGWI.

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Philadelphia Area High School Water Heroes

The following are two examples of situations where high school students have made significant contributions with water/sanitation projects in Asia. The first project, Ajaya Girls School, was a partnership between the local community, Dr. Arun Deb, PGWI Board member, A Drink For Tomorrow, the University of Pennsylvania students from the School of Arts and Science, and high school students from Archmere Academy in New Castle County, Delaware. After hearing Caroline D'Angelo, a student from the University of Pennsylvania, describe the conditions in India and Sri Lanka, the Archmere students contributed the $750. from their annual fundraising event to this project. The second project is a school located in Sri Lanka. Students from a high school in the West Chester School District in Chester County, Pennsylvania, used their fundraising money [$450] to build a water supply for the Sri Lanka school and to rehabilitate their toilets that had fallen into disrepair.

AJAYA GIRLS SCHOOL, PURBA MEDINIPORE, WEST BENGAL, INDIA

Ajaya Girls School is located in a remote village of Bansguria, about 150 km south west of the city of Calcutta. The school has been established to promote girls education in the area. At present it has 235 students and 7 staff members. The building and other infrastructures of the school are not up to the standard. It serves secondary education to girls students of five surrounding villages. The school does not have a running water system; in fact, it does not have a good source of water. Because of lack of safe water and good latrine, absenteeism among the students is also high.

Ajaya Girls School Building

Ajaya Girls School Classroom

Present Water System:

Currently the school has a dysfunctional hand pump which is very erratic and grossly inadequate for supplying water to more than two hundred students. There is no water supply in the latrine. Students carry water from a nearby pond for flushing latrines.

Students are also forced to wash their utensils with dirty water in the nearby pond.

The project proposes to construct a new well about 700 feet deep with a submersible pump. The pump will pump water to two overhead tanks which will be located at the roof of the school building. Water

pipelines with all the necessary fixtures will be constructed connecting overhead tanks to a proposed drinking water station with multiple faucets for students to drink water. Water lines will also be connected with all latrines for flushing of latrines.

Operation and maintenance:

The school will form a committee named WATSAN consisting with the 10 girl students and two teachers.

The school will open a separate bank account for funding cost of operation and maintenance of the proposed water system by raising monthly subscription from students and teachers.

Health education:

Teachers will give lessons to students on overall hygiene, importance of water and conservation and efficient use of water at environmental class. In addition, each day at the beginning, teachers will stress the importance of personal hygiene to all students.

A Student is Bringing Water from a nearby Pond for Flushing Latrine

Sri Lanka School Project

Teens Against Poverty ("TAP") is an organization started by students and continues to be run by students. The mission is to educate fellow students about poverty, fundraise and to have fun. Members of our organization represent the following schools: within the West Chester Area School District [Pennsylvania, USA]: Stetson Middle School, Fugett Middle School, Rustin High School and East High School; we also have members from Salesianum School and Ursuline Academy in Wilmington Delaware.

TAP was lucky enough to find the Philadelphia Global Water Initiative when we were looking for a project to help build a water well in Africa. Our funds helped ease the way for Engineers Without Borders complete their project to build a well in Cameroon Africa. We were also introduced to the Sri Lanka Lavatory Project through PGWI and are only too grateful for the opportunity to have a special fundraiser for the project. In March, in recognition of World Water Day, TAP hosted a Beach Blast Pool Party for our local 6th, 7th and 8th grade students. Party goers participated in games, pool competitions (like the biggest belly flop contest) and purchased snacks from our concession stand. We raised over $450 to help the Sri Lanka Project. We believe that everyone had a great time and the money went to a great cause.

Approximately $200. was raised in Sri Lanka and with the $450 raised by the West Chester students the students in this Sri Lanka school have fully functioning water and sanitation systems [see pictures below]. The students and teachers have developed a work schedule to maintain these facilities. Hygiene education is also included. Teachers at the school told PGWI officials that the incidents of students illnesses fell dramatically after the toilets were upgraded and a water supply tank and plumbing were installed.

Squat toilets are most commonly used, however, only 10% of the population has toilets at all. The tap provides water for cleansing after using the toilet (both personal and the toilet). The ceramic tile allows for easy cleaning, especially in comparison to concrete, which some government projects in India and Sri Lanka use.

Water storage tank: water is only available for ~3 hours daily at specific times

Education and Outreach Efforts by University of Pennsylvania Students

Contributor: Hassan Ammar, PGWI Education Coordinator

Students from the University of Pennsylvania, in partnership with PGWI educate students from Middle School through Undergraduate on issues of water and sanitation, emphasizing the global nature of the problem of lack of access to safe drinking water and adequate sanitation. We focus on different water crises that residents of rural or urban areas have to deal with as well as informing students about different parts of the world where the situation of unsafe drinking water and inadequate sanitation is most critical. (sub-Saharan Africa, Southern Asia, and Eastern Asia).

University of Pennsylvania classroom

We aim to train students and raise awareness about global water and sanitation issues so that the goal that the United Nations has set as one of its eight Millennium Development Goals (reducing by half the proportion of people without access to safe drinking water or sanitation by 2015) can be achieved. In order to educate students about global as well local water and sanitation issues, PGWI has organized workshops, lectures and classes at various High Schools in the Philadelphia Region. Some of the schools that we have worked with recently include Lincoln High School, Maritime Academy Charter High School, University City High School, Archmere Academy, and Philadelphia High School for Creative and Performing Arts.

PGWI members with the
Sri Lankan Minister of Education

In July 2010 PGWI worked in collaboration with the Fairmount Waterworks Interpretative Centre on the “Global Water Awareness Project” in which PGWI members taught high school students how to build homemade water filtration systems as well conducting lectures and interactive discussions about PGWI’s international water projects in Cameroon, Rwanda and Pakistan.

In Jan 2011, PGWI members travelled to Sri Lanka and India to visit PGWI-funded water/sanitation projects at a

school, as well as having meetings with the Sri Lankan Minister of Education and several other schools/hospitals to assess them as future PGWI projects and discussing future partnership options.

In March 2011, PGWI members and University of Pennsylvania students participated in an event organized by the Philadelphia Youth Network which aimed to bring global exposure to high school students and to infuse global perspectives into high school projects through speakers, trips, media and other easy to access resources. The event brought together 24 different organizations to provide free and fee-based education resources to enhance high school programs and to support Philadelphia Youth Network's theme of "Work Locally, Think Globally".

In May 2011 PGWI was invited to the Maritime Academy Charter High School to talk to high school seniors about the United Nations Millennium Development Goals, water pollution, water scarcity as well as various other global and local water/sanitation issues.

A handwashing station

Vision For the Future

We hope to increase the outreach to schools in the Philadelphia area and coordinate these outreach efforts in partnership with established successful operations such as the Fairmount Water Works Interpretive Center, Abington High School, and the Philadelphia Youth Network. We believe that by reaching out to students and providing them with information on the global water issues their understanding of science and the global community will inspire them in their future studies and careers.

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Where Are They Now?
Former PGWI Students

Vivian Futran

I began volunteering with the Philadelphia Global Water initiative (PGWI) before my first semester at Penn. Stan Laskowski, President of PGWI, invited me to attend a Board meeting and become a volunteer. As my involvement in PGWI grew, it fundamentally shaped my long term goals.

PGWI empowers its volunteers—students, professionals, anyone with enthusiasm—with the resources to learn about the global water crisis, and outlets to tackle it. In addition to more common fundraising/ awareness campaigns, there are projects focused on education, healthcare, engineering, policy, law, economics, etc. all over the world. Through the dozens of ongoing initiatives in its network, PGWI is a platform for collaboration and networking.

My energy and creativity were rewarded with a hired position of increased responsibility and autonomy. As Program Manager, I coordinated volunteers, meetings, and events. I spoke on panels, made presentations, advised Board members, updated the website, and helped execute an international conference. The knowledge and leadership skills serve me extraordinarily well as an environmental PhD student today, and have positioned me as a more attractive candidate for future jobs. My experience at PGWI is the reason water issues are a passion at the crux of my professional life.

Nalat Phanit

I graduated with a Master of Environmental Studies, with a concentration in Advocacy and Outreach, from the University of Pennsylvania in 2009. I also hold a Bachelor of Business Administration in Marketing, from the City University of New York, Baruch College. My ambition is to educate the youths of America on various environmental issues and to inspire them to actively live an environmentally-conscious lifestyle. I am currently an administrator at Project for Nuclear Awareness and a volunteer at Global Children Education Improvement Initiative, United Nations Association of Greater Philadelphia, and Philadelphia Global Water Initiative.

PGWI's Future

"The Initiative for Global Environmental Leadership (IGEL) has had the pleasure of sponsoring The Philadelphia Global Water Initiative (PGWI) conferences and events for the past several years. PGWI has been an outstanding collaborator of IGEL and has been extremely instrumental in guiding our research topics on the value of water with several corporate constituents. PGWI has been a pioneer in the forefront of laying the ground work for best practices in water efficiency in major corporations in the Delaware Valley. We have valued the expertise and high currency of this organization for being one of the premier leaders in sustainability. PGWI represents the cornerstone in building a more sustainable future."

Joanne Spigonardo
The Initiative for Global Environmental Leadership

The Strategic Plan

Contributor: Richard Riegler

Shortly after the founding of the Philadelphia Global Water Initiative it was decided that a Strategic Plan should be adopted and periodically updated as the organization evolved. The Plan includes objectives, strategies, and principles---all focused on the Vision and Mission of PGWI, supportive of worldwide efforts to provide safe drinking water, and sanitation and hygiene services to all peoples of developing countries.

The first objective of the Plan relates to the implementation, by PGWI, of drinking water and sanitation projects in the developing world either directly or in partnership with NGOs located in developing countries, or in partnership with PGWI members and other US-based organizations. PGWI serves as a hub in a network system connecting the multiple disciplines and sectors, and their expertise, to advance drinking water and sanitation initiatives in a comprehensive and sustainable manner.

The second objective of the Plan supports the first. Namely, to raise sufficient funds supportive of projects undertaken by PGWI and its partners.

The third objective of the Plan calls for PGWI to provide leadership in the areas of awareness, education, and research. Professional and technical opportunities are provided for US students as well as personnel in developing countries such that a knowledge base is developed and applied in resolving global drinking water and sanitation issues. Educational conferences are developed and conducted by PGWI and PGWI members participate in conferences nationally and internationally . Through university partnerships, including universities in developing countries, PGWI will (and has) participated in exchanges, research, and workshops. And PGWI promotes educational initiatives, instructional materials, and course offerings at the primary, secondary, and university levels.

In pursuing these objectives the Operating Principles of PGWI ensure that drinking water and sanitation projects will be sustainable. Further, accountability related to all phases of the project--design, construction, operations, maintenance , and management--will be clearly demonstrated to project funders as well as project beneficiaries.

For a further, more complete understanding of the Strategic Plan , go to the PGWI website.

PGWI's Strategic Planning Committee will continue to update the Plan as the organization evolves.

CETRA and PGWI Partnership

PGWI LOGO

CETRA Language Solutions, a global provider of translation and interpretation services headquartered just outside Philadelphia, recently joined the PGWI network as a partner.

Molly Stejskal, Vice President of CETRA, explained that in 2010 CETRA revised its mission statement to include a commitment to 'doing good.' As a start, a committee of CETRA employees was formed to explore various charity options. The committee decided to look for a local organization with a language, communication and/or educational focus.

CETRA's pilot project this year, the Philadelphia Global Water Initiative, received the most employee votes out of five choices. PGWI fit CETRA's defined profile because of its educational programs for high schoolers in the Philadelphia area. However, it went beyond the stated profile with its global impact, providing sources of clean drinking water to communities around the world, and educating them on how to sustain their clean water sources and practice good hygiene to avoid disease.

Molly mentioned that CETRA hopes to be able to support PGWI not only financially but also through in-kind contributions of language services.

The specific project that CETRA has chosen to support is located in Ngyenmbo (population about 5,000) in the Northwest Region of Cameroon in West Africa. It will consist of developing a water catchment area and piping spring water from the hills down to the valley where most of the population resides with the goal to use the water for general household purposes, a health center, and schools.

CETRA has a history of supporting several charitable works, including disaster relief for Hurricane Katrina, the MS City to Shore bike ride, Red Cross emergency training for interpreters and the Japanese Earthquake Relief Fund.

About CETRA:

Dr. Jiri Stejskal, CETRA's president and CEO, founded the company in 1997.

CETRA's services include translation, interpretation, sign language interpretation, localization, multilingual typesetting, voice-overs, and transcriptions for corporate and government clients in over 100 languages. Its worldwide network of more than 5,000 professional linguists and dedicated staff provide professional, friendly, responsive service that saves customers time and makes working with CETRA a pleasure.

Images from the announcement of CETRA and PGWI Partnership, August 16, 2011

funraising page

Acknowledgements

Essentially everything that PGWI has accomplished since its founding in late 2006 has been in partnership with others who want to help others and make the world a better place. These include the organizations listed in Part one of this report, many national and international leaders, and the leadership of literally hundreds of volunteers who work for PGWI and its network organizations. At the risk of missing some important collaborators, we give special acknowledgement to the following:

- Many thanks to Nalat Phanit who prepared this report and to her husband, Jesse Black, for his technical assistance. In addition to her superb work here she has helped with various PGWI Conferences, and was a leader with UPenn students at the World Water Forum in Istanbul in 2009.

- The founding organizations and individuals who in 2006 believed that through collaboration that they could have a bigger impact on water and sanitation issues [these founders are listed in Appendix__]. Their wisdom and vision has been the basis for PGWI accomplishments during the past five years.

- The University of Pennsylvania, especially the Department of Earth and Environmental Science [EES], the Initiative for Global Environmental Leadership at Wharton [IGEL], the School of Engineering and Applied Science, and the School of Medicine. Financial contributions from EES and IGEL have been instrumental to successful PGWI Conferences. Special thanks to Dr. Fred Scatena, EES Department Chair for his consistent support and advice in all facets of PGWI, Dr. Yvette Bordeaux, Director of the MES program for her involvement of the students and her support at international conferences, Dr. Robert Giegengack for his many presentations and guidance, and Arlene Mand for her help in many areas including Conferences, student work rules, and many administrative areas. Dr. Eric Orts , IGEL Principle Investigator, and Joanne Spigonardo, Associate Director, IGEL have been steadfast with their advice and support in every way. Dr. Christiaan Morssink works tirelessly proving insights from the Public Health perspective, ensuring as PGWI Treasurer that the organization is in compliance with good bookkeeping standards [and also serves as the President, United Nation Association-Greater Philadelphia Chapter].

- Other members of the PGWI Board who continually volunteer their time and expertise in many different ways. The members of the Board are listed in Appendix ___ . A special thanks to Tony Bartolomeo and Pennoni Associates for their financial support of the PGWI Conferences and their hosting of the quarterly PGWI Board meetings. Tony has also been instrumental in helping PGWI make many valuable contacts throughout the Philadelphia area. Ed Grusheski, former Philadelphia Water Department leader offered his strong support and encouragement in launching the PGWI effort. Vince Uhl, PGWI Program Committee Chair, Tony Sauder, Pennoni Associates, and Dr. Arun Deb are examples of PGWI Board members who provide leadership based on their extensive experience with projects in developing countries. Greg Kelder, PGWI VP for Fundraising, is a consistent source of creative ideas in raising money and making partnerships for PGWI. Dick Riegler, PGWI VP for Strategic Planning uses his extensive experience in business and other NGOs to provide vision for PGWI's future. Walt Walker, President, Engineers Without Borders; Aldo Magazzeni, President, Traveling Mercies; Dr. Elijah Korich, President, Keiyo Soy Ministries; and John Steele, PGWI Secretary and Rotary

International District 7450 water manager are examples of individuals who are extremely successful leading their own organizations with water/sanitation projects in developing countries but who take time to help others in the PGWI network with their insights. Karen Young, Director, Fairmount Water Works Interpretive Center, along with Ellen Schultz and their supporting staff have been essential in connecting the PGWI network on water education issues and in supporting numerous receptions/educational events at the FWWIC. Mary Rodgers, Abington High School and H2O for Life leader; Dr. Godlove Fonjweng, Wilkes College, Dr. Shannon Marquez, University of the Sciences, Ursula Reed, Schultze and Williams; and Mayosha Mendis have each been a shining example of using education and outreach to advance a greater understanding of global water and sanitation issues.

- Special thanks to Mark Freed, Esquire, Chair of the environmental practice group at the law firm of Zarwin, Baum, DeVito, Kaplan, Schaer, Toddy , who has provided consistently wise counsel of legal and other issues and to _____ ask Christiaan for who has helped on financial issues. In 2011 Cetra Language Solutions has adopted PGWI as its charity of choice and supporting efforts in Cameroon.

- Numerous Philadelphia-area NGOs not formally on the PGWI Board have unselfishly given their time and talents to others in the PGWI network. These include A Spring of Hope [Brittany Young, President], A Drink For Tomorrow [Stephanie Weaver, President], Water For Waslala [Justin Knabb, President], and Coffee For Water [Jahan Travangar, President].

- World and national leaders in the water/sanitation field have been especially supportive at PGWI Conferences, in hosting UPenn students at their Headquarters, and advising PGWI and students on research and career directions. Examples of these organizations include the United Nations [_____], the US State Department [_____], USAID [_____], USEPA [Stephanie Adrian, Francesca DiCosmo, Roger Gorke, Mick Kulik, Elaine Wright], The Delaware River Basin Commission [Carol Collier], Pennsylvania Department of Environmental Resources [John Kennedy]. _____

- The many student volunteers from universities in Philadelphia, especially the University of Pennsylvania. They number in the dozens and special thanks go to the lead student, called the PGWI Program Manager, who have coordinated the students activities. Past Program Managers have been Lara Roman, Niva Kramek, Dee Nguyen, Vivian Futran, and now Raleigh Davis has that responsibility. _____ who else to signal out?

- Numerous others from NGOs organizations have been supportive as PGWI has grown and learned from them. Ned Breslin, Water for People, has signed a MOA with the University of Pennsylvania and PGWI and has been instrumental in providing advice on the research on performance indicators. Kusum Athukorala, co-chair of UNESCO group on women and water and leader of Network of Women Water Professionals [NETWwater] in Sri Lanka has provided advice to Upenn students and has encouraged their work in Sri Lanka. John Oldfield and Michael Oldfield, Water Advocates [John is now with WASH initiative] have consistently supported and supplied encouragement and advice to PGWI. Clive Lipchin, Director of Research, Arava Institute in Israel has provided valuable insights from the Middle East. The Bengal Engineering and Science University in Kolkata, India has advanced water issues by holding a joint conference with UPenn in 2011 and with hosting students doing research papers.

Appendix