

November, 2015

Dear Friends of Waterlines,

As the year draws to a close, we'd like to bring you up to date with the work of Waterlines. This past year volunteers and in-country facilitators have helped local communities complete 27 new water projects in villages and schools, primarily in Kenya, Ethiopia and Panama. Waterlines' projects include gravity-flow systems, spring protections, and tank-and-gutter systems to harvest rainwater. Communities continue to contribute at least 25% of project cost.

In addition, this past year Waterlines' volunteers and facilitators have used well-designed questionnaires and first-hand observation to check on 120 earlier-constructed water projects to determine: *"How is it actually functioning, years after construction?"*

As much as any non-profit in the country, Waterlines continues to focus on answering that question of sustainability, and to take steps (where appropriate) with local communities to resolve identified problems or slightly improve the system. Waterlines' attentiveness to the functioning of constructed projects has rippled out to influence how a number of other organizations approach long-term water project sustainability.

Around the world 2.6 billion people gained access to improved water since 1990. However, 660 million people still lack even 5 gallons of water per person per day from an improved water source. A harrowing recent report by UNICEF and the World Health Organization found that nearly 40% of hospitals and health-care facilities in developing countries lack water and soap on the premises. Access to adequate water and sanitation is a solvable problem. Many of you have done more than just lament. You've taken action to respond.

Thank you.

David Douglas



**Waterlines Board Members:** Judy Crawford, Fr. Robert Cumberland, Deborah Douglas, David Douglas, Pete Fant, Lou Harrington, Betty Kersting, Diane Reimers, Mark Reimers, John Vavruska, Tim Wellman, Bill Muldrow (Emeritus)

# **Schools and Rainwater Harvesting in Western Kenya**

**By Mark and Diane Reimers, Waterlines Board Members**



Waterlines has assisted 450 rural schools in the last ten years with rainwater tank & gutter systems in the counties of Bomet, Kericho and Nandi in western Kenya. This past year Waterlines' three Kenyan facilitators (Richard Kayla, Joel Mitei, and David Kurgat) helped to oversee the construction of 28 new water projects at primary and secondary schools. The cost of a new project is \$2,600 to \$3,100, depending on the size of the tank. Waterlines provides 75% of this cost and the school provides 25%.



In addition, since 2013 Waterlines has increased its post-construction monitoring of schools, particularly where projects are older than 5 years. The facilitators visit 30 to 40 of these older projects each year to check on project functioning and community support. Waterlines' "Monitoring



and Action Plan" (a 3-page questionnaire designed for Kenyan schools) has proven highly effective in both measuring current conditions and identifying problems and their resolution.

The good news is that in most cases the tanks are continuing to provide improved water at the schools. However, annual tank cleaning needs major follow up and training. Further, gutter systems at many schools need to be upgraded to increase the amount of water collected. Waterlines contributes up to \$250 per school, if matched by the school community, to strengthen gutters or to address other minor problems with older systems.

## **Water. . . And Sanitation & Hygiene (WASH) at Schools**

In addition to its regular program of rainwater harvesting at Kenyan schools, Waterlines works to expand latrines and hygiene education, continuing a pilot WASH (Water and Sanitation & Hygiene) program in partnership with Tenwek Hospital Community Health and Development. TCHD vets the schools, sponsors training for the WASH program, and ensures hygiene education and the completion of tank and latrine construction.

Since 2008 Waterlines and TCHD have collaborated on a complete WASH program at 62 schools. This program is challenging, given the need not only for new facilities and teacher training but additional resources for adequate maintenance.

The Kenyan Government's funding of WASH for schools, though increasing, often remains inadequate to meet capital construction and maintenance needs for full implementation of WASH. WATERLINES is increasing its coordination with the Kenyan Government through the new County Governments.

*Photographs by Mark and Diane Reimers. Upper left: Student at Kapkatet Day Secondary School with 61,000 liter tank, Lower left: Students at Heroes & Heroines Primary School with 48,000 liter tank, Upper right: Esimendwa Primary School tank & gutter system*

## **Ethiopia Update by John Vavruska, Waterlines Board Member**

In the past decade, Waterlines has funded 50 spring-protection projects in Ethiopia's Wollega Province, working in conjunction with the Western Wollega Bethel Synod. In the past two years, Waterlines volunteers John and Anna Vavruska have visited 25 of these completed projects to check how they were functioning. After each trip, detailed reports were prepared documenting the quality of construction, current condition, and extent of continuing community involvement. Six projects were identified for repairs and these have since been completed with the communities' help. Four new



proposed projects for 2015 were also identified for cost estimates, including one large gravity-flow water system project at Guri Mariam.

Closer to Addis Ababa, a recently completed spring protection-project in good condition was also visited, constructed under the leadership of the non-profit organization Afro Ethiopia Integrated Development, led by Shimeta Ezezew. Over the years Waterlines has funded a dozen spring-protection projects with Afro Ethiopia Integrated Development.



*Photographs of spring protections in Wollega Province by John Vavruska*

## **After the earthquake: Update from Nepal's Chupar by John Vavruska**

Waterlines began work in the remote village of Chupar in Nuwako district north of Katmandu in 2011 through a close friendship with Uttam and Budu Rai of Santa Fe. Budu's parents and extended family live in Chupar. As some supporters of Waterlines will remember, Waterlines matched funds raised from trekkers to the village to build two 2-stall composting latrines and a small gravity-flow water system for the village. The latrines, the first ever in the village, have not only improved sanitation but have also been successful in producing compost for agricultural needs in the village.



The water system includes a spring protection, a holding tank, a short transmission line, two-room shower stall, water tap, and a clothes washing stand. Tragically, all 215 houses and the school in the village were destroyed in the 7.8 magnitude earthquake of April 25, 2015, but the latrines and the water system survived and are in service today.

Waterlines will assist with a small gravity flow water system and composting latrine dedicated for a new school which will begin construction in early 2016.

*Photograph of child in Chupar by John Vavruska. Other post-earthquake photos can be found here:*

[https://picasaweb.google.com/115665761390565758305/NepalEarthquakeReliefForVillageOfChuparMay2015?authkey=Gv1sRgCJ722\\_jFjcXiUA&feat=directlink](https://picasaweb.google.com/115665761390565758305/NepalEarthquakeReliefForVillageOfChuparMay2015?authkey=Gv1sRgCJ722_jFjcXiUA&feat=directlink)



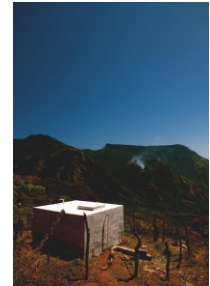
## Panama Update: A look at Waterlines' projects related to the Peace Corps

By Tim Wellman, Waterlines Board Member

For the past fifteen years Waterlines has provided technical assistance and funding for small gravity-flow water systems in rural Panama in collaboration with the U.S. Peace Corps Environmental Health Program. Peace Corps Volunteers (PCVs) receive training on water system design, rehabilitation, troubleshooting and water-committee development, then put these skills to work in the field. PCVs with engineering or water operations background typically solicit assistance from Waterlines after one year of service in their host community. Waterlines assists the PCV in development of the project and provides a portion of the project funding. **Over 45 communities in Panama in remote indigenous reserves have now improved their access to potable water with assistance from the Peace Corps and Waterlines collaboration.** Waterlines also supports the PCV-led water committee training seminars on the technical, managerial and financial components of water system management. Seminars take place in the communities and use participants' knowledge and skills as the guide for capacity development.



In addition to new projects in Panama, Waterlines also supports **Peace Corps Response Volunteers** who have already completed two years of service and want to continue to work as Volunteers but in a more specific role as "Circuit Riders." They travel a circuit of a dozen or so communities, providing technical assistance and training to water committees in communities where PCVs and Waterlines supported water systems in the past. Circuit Riders work with water-committee personnel to monitor the water system status, resolve problems that affect water delivery, and learn from this process to develop capacity in the local leaders to be able to address future issues. Waterlines supports the work of two PC Response Volunteers annually in Panama. *Panama photos by Leo Redmond, Waterlines volunteer: Mother & child in the Comarca Ngabe Bugle, water tank, and Waterlines facilitator Nicholas Area showing Fr. Robert Cumberland the location of a potential water source.*



### WATERLINES 2014-2015 INCOME AND EXPENSES

**Beginning balance January 1, 2014: \$282,089**

**Income during 2014: \$254,153**

**Project expenses during 2014: \$260,253**

**Beginning balance January 1, 2015: \$275,990**

**Waterlines' complete annual reporting returns to the IRS (Form 990) available on request**