



The Global Water Initiative

Newsletter

A Partnership Funded by the Howard G. Buffet Foundation

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Brief on GWI

The Global Water Initiative program was developed in 2006 and is funded by Howard Buffett Foundation (HGBF). The program goal is for vulnerable communities in arid and semi arid areas in East Africa (Kenya, Uganda, Tanzania and Ethiopia) to reduce their vulnerability to water-related shocks and improve their quality of life through integrated water resource management. The stories carried in this edition are success stories achieved in year two of implementation and provide lessons to build into year three plans and activities. The program uses an Integrated Water Resource Management approach that incorporates active participation of all users in the project area.

The program is implemented by ACF, CARE and CRS with the latter as the lead organization in Kenya. Program sites are in Mbalambala, Sunguri and Central divisions in Garissa district; and Bangale in Tana River district.

This year ACF has a fresh start in Bangale having moved from Sankuri and Central divisions in Garissa district. CARE took over program implementation for previous target locations in Garissa. In Bangale, the community has high expectations of benefitting from the GWI program and has welcomed ACF to start activities in the area.

Water and sanitation open school doors

By: *Ibura (CARE); Hirmoge (CARE) and Malaika (CARE Atlanta)*

According to its school health club members, Modika Primary School is no longer a dry place, ten kilometers east of Garissa town in Northern Kenya. Since 2008, Modika school received from CARE, through the Global Water Initiative (GWI): a rainwater harvesting system with a main tank that connects to the municipal water supply; four latrines (two for girls and two for boys); and containers and stands for drinking and hand washing.

The water has many uses and has improved life in the school, though it is mainly used for drinking and cooking lunch, it's also used for hand washing, a small step with the huge pay-off of helping to curb the spread of disease, irrigating the school farm, watering trees and cleaning latrines.

Students used to utilize the nearby bush before the latrines were constructed. This was particularly difficult for the girls who feared being seen by the boys. Many of them dropped out of school and some totally failed to enroll.



Students cluster around a container for hand washing water.



"I used to go home in the middle of the lessons since there were no latrines in the school," says Sofia Yerrow, a member of the health club, "and come back late for my lessons or even sometimes never come back until the next school day."

Judging from the discussions held with them, the pupils appear to have sufficient knowledge on hygiene practices, proper sanitation, safe water treatment and storage and hand washing with soap. Ibrahim Mohammed explained and demonstrated to GWI staff how to treat water by putting three full lids of water Guard into a 60-litre water tank. Water Guard is a simple chemical water treatment solution using the sodium hypochlorite as the active ingredient.

Deputy Head teacher, Mohamed Shurie, said "The availability of water and sanitation has scaled up the school feeding program and has increased enrollment," He also noted that the school farm has boosted the children's interest in learning, especially for science subjects as they practice in using the newly introduced drip irrigation technology.

Despite these encouraging results, there is room for concern. There was no water available on the day of the visit. According to Mohamed, the water supply from the municipality is often erratic and there had not been sufficient rains to replenish the tank.



Members of the school health club

Water Brings Change to mothers in Kaba Village

By Lillian Wanjiru (CDG) and Christine Banga (CRS)

"Mothers used to spend the entire day searching for water" says Shidhie Abdille, chair person, Kaba water committee in Tana River district, Kenya. He further noted that "Many of our small babies went without being breastfed the whole day." A change brought about by the GWI-CRS project initiative that empowered the community to build its own water sand dam made lives easier for women and the community at large to engage in other economic activities.

Now when one visits Kaba, things are very different than they were 3 years ago. Women no longer walk long distances to collect a few gallons of water for cooking, bathing, and laundry. Instead they use less than 30 minutes to fetch water.

Women not only have more time to breastfeed their babies and spend time with their children they are also learning skills that help them bring more income in-to their homes.

"We now have time to do other work and also earn some money," says the female leader of a group who weave mats to sell at the local market. At that very same market

one can now stop for a refreshing cup of tea served at a kiosk that benefit from the easy access to clean safe water.

In order to ensure the sustainability of the water project, the GWI program trains artisans selected by their respective communities on operation and maintenance. When a hand pump recently needed a minor repair, Maalin Hassan, a water point caretaker, knew exactly what to do, "I am able to detect and fix any problem with the machine", he quipped.

The local water committee meets under the big tree in the centre of Kaba village. Part of the water initiative involved training on effective leadership and record keeping. Women are now taking a greater role in community leadership. Whereas previously women were not allowed to speak in public, at the most recent meeting four women openly spoke in public. "Women are part of our community," explained the committee chairperson when asked about this change, "this water project is benefiting all of us, including children. We have to involve them."

Ceramic Pot Filters

Provide a New Option for Household Water Treatment

By Charles Matemo, ACF Kenya

ACF is introducing ceramic pot filters in place of biosand filters in bangale as part of the overall program that aims at reducing water-related diseases at household level. Key focus of the sub component are water testing to monitor the quality of water and household education that informs people about the value of clean water, how filters work and how to take care of their filters and use them effectively. The filters are procured in Limuru, but the organization will support the link between the producing company and the local community to make it available at community level. With the ceramic pot filter, the assurance of water quality is better than for the biosand filter, but the water flow is less (1-2ltrs/hr) than that of a biosand filter. The ceramic water filter is thus appropriate for filtering water for direct drinking; assuming water for cooking will boil while cooking and thus lower contamination of food.

ACF had introduced biosand filters to communities in Garissa, but due to many challenges it is now trying out ceramic pot filters. Some of the challenges to biosand filters included: transportation of biosand filter structure due to its huge weight (biosand filters are made out of concrete materials instead of metal or plastic); biosand relies on a biological layer (Schmutzdecke) that takes weeks to mature and there is no easy field test to determine when the Schmutzdecke layer is functioning properly. The biological layer is also sensitive and requires water to be poured into the biosand every other day to maintain it; construction of concrete biosand filter is challenging when involving local community in the production, especially maintaining proper mixes which determine the quality of the concrete biosand filter structure; and lastly biosand filter is affected by turbidity greater than 50NTU (Nephelometric turbidity units) and the results from filtering water above this turbidity are not assured to be safe.

Purification mechanism: Dirt and bacteria are physically strained out of the water, as they are too large to pass through the ceramic substrate. Clay that has been vitrified through firing in a kiln changes chemically to become a slightly porous material and allows water to pass through it, straining out most bacteria, protozoa, and helminthes. Burn-out material (organic materials that burn during the firing process is added to raw clay to produce pores that increase the rate of flow through the pot to make them a practical filtration material .

Silver applied to the inside and outside of the filter is absorbed into the clay pores. Silver ions are reduced to



Chujio pot filter with water



ACF staff following up on usage of pot filter

elemental silver and form colloids within the filter body. Silver acts as a biocide against bacteria when there is sufficient contact time. Process of " sedimentation" of particles within the pores of the filter ensures particles are restricted from passing through the pot wall, hence improving on the turbidity reduction.

Effectiveness: The filter has been found to remove 96.4 to 99.7% of E. Coli bacteria. It does not remove viruses.

Prevention of Recontamination: Water remains in the bucket and must be accessed through a tap, thus maintaining standard of cleanliness and reducing the possibility of recontamination of filtered water.

A Glass More than Half Full

Drinking Water Raises Hopes in Balambala

By René Bartholomew, CARE USA

It is a scorching day in Balambala, a rural village in northeast Kenya which feels closer to the sands of Somalia – geographically and culturally – than to the noise of Nairobi. Farhiya Rashid, the 16-year old chairperson of the Balambala Primary School's health club, is describing the range of diseases that afflict the children in her community. Her knowledge is impressive: she lists bilharzia, cholera, and typhoid fever as the diseases caused by the region's water. She then goes on to discuss malaria and the need for maintaining a clean environment, not only at home, but also within the school compound. Given her enthusiasm about the topic, it is not surprising when Farhiya notes that her favorite subjects in school are science and mathematics.

The temperature is higher than 90 degrees Fahrenheit but Farhiya, fully covered from head to toe in typical dress for this predominantly Muslim region, does not seem bothered by the heat. It has not rained for months – the schoolyard is dusty and the school's few crops (their attempt to use extra water to increase the community's agricultural production) are struggling to grow in the heat. These harsh conditions contribute to the late enrolment of children to school and also negatively impacts on their performance.

The drive from Nairobi to Balambala takes at least seven hours, the last three of which are along rugged dirt tracks. The route is lined with young boys herding goats and women who walk for miles to collect firewood and water that, unbeknownst to them, may be the reason their children often fall ill. Here in Balambala and the neighboring villages, most people have a pastoralist background: fathers rear animals during the day, which they sell to buy food; mothers remain at home and tend to the household and children. Water points are miles apart from each other, and most of the water is untreated. People and animals battle to use the limited supply and it's difficult to determine which side wins.

Balambala is just one of several villages that have been targeted by CARE's Running Dry project, which operates not only in the arid lands of Kenya, but also in similar regions of Ethiopia, Tanzania and Uganda. The Running Dry project aims to reduce these communities' vulnerability to water-related shocks and to improve their overall quality of life. As such the project does more than construct water tanks in communities and provides water filters to homes; it educates the community members, training them to develop good hygiene practices and to

employ simple water treatment techniques in their homes. At schools like Balambala Primary School, the project focuses on children as an important entry point into these communities by educating the pupils who are health club members who disseminate the information to the entire school population about water-borne diseases and the need for good sanitation.

As a female leader in a culture that is usually dominated by men's opinions, Farhiya takes her job as chairperson of the school health club very seriously. She stresses the importance for club members to educate their classmates and their neighbors about the need to drink safe water, wash hands regularly and dispose of trash properly. Having five brothers and sisters, Farhiya is fully aware of how much of an obstacle a serious illness can be to a young child's education. Sick children are inevitably absent from school for extended periods of time. Even in the case of a sick parent, older children – mostly girls – stay at home to care for the ill and tend to the home, sometimes eventually forgoing their education. Farhiya has bigger plans though: she believes that her love for sciences and mathematics are her key to a better life. "I want to be a pilot one day," she says with a timid smile. "It might take a long time, but I'm ready. One day maybe, I'll fly to the United States."

*Editor's note: extra photos of Farhiya and the health club are available. Please contact René Bartholomew or Jack Odongo to view them.



An older student helps one of the younger girls wash her hands.

IUCN Tackles Integrated Water Resource Management in Kenya

By Katharine Cross (IUCN Eastern Southern Africa Region)

IUCN has initiated a project on Building Capacity to Manage Water Resources in Uganda and Kenya with the aim of complementing existing Global Water Initiative projects in both countries. Working with GWI partners (CARE, Catholic Relief Services and Action Against Hunger), the goal is to strengthen governmental water management institutions to develop and implement an enabling policy framework needed for eventual scaling up of GWI interventions to a wider area and to the national level. The project is funded through the IUCN Water and Nature Initiative (WANI).

Across East Africa, Uganda and Kenya included, it is recognized that catchment-based water resources planning, management, and development down to the local level is key to enhanced water resources management. This approach is seen as essential for sustainable and integrated water resources management.

As a partner in GWI, IUCN has been engaged in the Tanzanian component of the Running Dry Programme. IUCN has concentrated on integrated water resource management, specifically around governance and risk management. Lessons learnt through awareness raising with stakeholders on water reforms and water rights, complemented by capacity building for institutions and communities, shall be replicated in the Kenya partnership to ensure that implementation takes place within the institutional framework established under national water policy. Climate change vulnerability assessments in GWI project areas shall be scaled up.

To achieve results in this partnership, the partners shall collaborate with government agencies such as the Water

Resource Management Authority in Kenya and the Ministry of Water and Environment in Uganda. The project will support the government in creating and strengthening water resource user associations or catchment committees to manage water in a sub-catchment area. This will be in GWI operational areas and involve community members who are also managing water and sanitation facilities.

One of the desired outcomes of the project will be that community and local stakeholders can plan, organize, manage and adapt to water related shocks, and conflict over scarce water resources will be reduced. This will lead to development of sub-catchment management plans and implementation of priority activities such as river bank restoration. Finally, the project aims to build capacity of implementing agencies and key stakeholders through learning, knowledge management and dissemination.

Exchange visits are planned between Kenya and Uganda and at the local level between communities.



A courtesy call by the IUCN and GWI team to the Bura District Commissioner

“It is wise when you learn it and beautiful when you practice it”

By Jack Odongo and Suban Khalif

Located in suburbs within Garissa town; Bouralgy Community appreciates the Global Water Initiative for its intervention, mentioning that they believe that it has improved their living standard since they believe they now use less money in treating preventable diseases like waterborne and diseases related to poor hygiene.

Samow Abdi Ali is a community health worker in Bouralgy health centre. According to him, 'Before the Global Water Initiative interventions, most of the people living here used to practice open defecation

which most of the time was the cause of high rates of diseases related to hygiene, but when CARE Kenya came to improve sanitation and hygiene issues in this area, the cases have reduce drastically since most of them have a latrine in their compound." Sami says the records at the health center show they are now treating more malaria cases and less diarrhea and dysentery cases, which were common in the past.

When we talked to him he said, "Before the construction of household latrines it was difficult to convince the community of the need of sanitary facilities for their

health, but later on when several latrines were constructed, it became easier for health workers to explain to them the need of practicing proper hygiene”.

Mama Dhahabo Ali, a community member in Bouralgy described some behavior change as a result of the project “Diseases related to poor sanitation and hygiene hit one household then spread very fast to the rest of the neighborhood, eventually affecting almost every household,” she said. “I will not hesitate to say the knowledge we got on proper hygiene behavior has helped us to raise healthy families, especially our children who most of the time are exposed to different kinds of diseases.”

Issues got more interesting when one of the elders by the name Mzee Hussein mentioned that the community is even breathing fresh air unlike before since open

defecation has been reduced. The old man chided those who have no latrine or do not practice proper hygiene for putting their own health in danger.

Mzee Hussein continued by recounting that earning a living has not been an easy task for the community since most of them are depending on low paying jobs which is not even enough for their basic needs. Hence practicing proper hygiene in their houses has not only made their surrounding within their houses beautiful but also has reduced their expenses in terms of medication spent on preventable diseases.

When the GWI group asked the women of the community about the critical times they wash their hands, they mentioned visiting the latrines, before and after cleaning a child, before preparing food, before eating and when handling safe water for drinking.

GWI Learns from a Model Project in Kitui District

By Suban Khalif (CARE), Anita Kiara, Gabriel Njiru and Abraham Kibii (Catholic Diocese of Garissa)

The GWI Kenya team and representatives from GWI target communities in Garissa and Tana River districts visited Kitui district on a learning trip. The district fall under arid and semi arid lands (ASAL) designation. The people of Kitui District are mainly agropastoralists, they grow crops and keep livestock, as do populations in the GWI target districts. The group visited successful water and conservation initiatives with the aim of borrowing ideas that can be replicated in GWI program areas. A successful case in point was Kisasi water project whose features are described below.

The Kisasi water project is a project managed and sustained by the community. The project is comprised of a sand dam constructed on the Kisasi dry river bed, a pumping unit, and distribution systems to water consumers. The Kisasi water users defined the sand dam as a masonry water barrier constructed across a seasonal river. The GWI team was particularly impressed by the distribution system that delivered water to either designated water kiosks or directly to homesteads. The three areas share similar geographical features i.e. dry sand rivers, woody trees and shrubs. A major difference noted was in the land tenure system. In the GWI project area land is communally owned and legally held by the local government as trust land, and mostly used for livestock, while in Kitui district, land is individually/privately owned – under leasehold and predominantly used for both subsistence farming and livestock rearing.

The community's water tariff system was another

milestone achieved by Kisasi community. The household receiving water in their homestead would pay as metered, while those drawing from the water kiosks would pay 3 Kenya shillings per 20 liters jerrican.

According to the Kisasi water project Chairperson, the water project not only provides water but also ensures that the water is safe for human consumption leading to reduction of water borne diseases in the area.

The GWI team noted that the Kisasi water user group was legally registered with a democratically-elected executive committee that was mandated by the group to recruit and supervise various workers ranging from line patrollers (community quasi plumbers) to kiosk managers. They noted that the project workers were doing a commendable job.

The GWI team appreciated not only the cordial and charming welcome they received but also the way the Kisasi Executive Committee answered concisely the questions asked and displayed books of accounts and other records, like bank statements. It was an example of accountability for all to see. Yes, the Kisasi Water Users had other problems to contend with, but they had made tremendous progress on the water tariff. The GWI team most admired the ability of the Kisasi Water Users group to pay wages and allowances to their staff while at the same time meeting operation and maintenance costs.

The GWI team from Garissa and Tana River districts had a lot of lessons to take home and possibly replicate.

More Household Latrines Means Less Conflict

By Suban Khalif (CARE Kenya)

Bula Mzuri is one of the suburbs within Garissa town which benefits from the GWI interventions. The village has people from different clans, religions and social classes living together. Due to these differences, those of lower social class have been sharing toilets for quite some time, which sometimes lead to conflict and often cause inconvenience.

The Global Water Initiative (GWI) supported Bula Mzuri in the construction of low cost household latrines, training on sanitation and hygiene practices, and the adoption of hand washing with soap during critical times.

On the morning of July 28, we met 60-year-old Mzee Abdullahi Omar in his butchery where he sells meat to his long-time neighbors. Mzee is one of the committee members overseeing the Global Water Initiative interventions. The elderly man describes life before the project: "There were those days when people in Bula were not keen on the need for proper sanitation. Poor drainage made the roads impassable. Quite a large population did not have a latrine in their compounds; children were practicing open defecation while grown ups were ever fighting with their neighbors since they were sharing latrines.

Talking to the beneficiaries of low-cost household latrines in Bula Mzuri community, it became clear that they are much more comfortable using their own latrines than before when they were forced to share with their neighbors, a practice that often led to conflict. They also feel their homesteads have become cleaner since the children are not practicing open defecation. To some, having a latrine has also led to friends and relatives coming to visit and even wishing to stay. When talking specifically to women on latrines, Mama Ijabo noted, 'When you know you have your own latrine and you can visit the latrine whenever the need arises, it's a relief and satisfaction, since you know you will not be a bother to your neighbors'

The availability of reliable water in this area has thankfully made it easier to expand latrine coverage since the communities do not struggle to get water for the construction and to practice proper hygiene and hand washing. "The first time I was told that I have to wash my hands with soap after visiting the latrine, I did not understand because am a Muslim and I use water to visit the latrine and wash myself. But I now understand that water alone is not enough; we need soap and I now use soap daily," said Mohammed Noor, a community member.

Winning Over Community Leaders to Sanitation

By Mayling Simpson - Hebert

CRS Kenya and the Diocese of Garissa are breaking through long-standing barriers to sanitation in rural pastoral communities of Northeast Kenya by involving local leaders in sanitation promotion. A recent meeting with village leaders in Tana River District has started the process of change.

Now in the third year, the CRS GWI project has achieved about 300 household latrines out of a targeted 1,845. When the project began there were 6 household latrines in the project area. At our current rate of progress it was imperative to engage community leaders to promote sanitation if our goals are to be met.

In order to move sanitation forward, CRS Kenya and the Catholic Diocese of Garissa (CDG) held a meeting last January with 39 community leaders. The diverse group included: district and division public health and gender culture and social services officers, provincial



A new latrine and bathing block in a pastoral village (Tula).

administrators, religious leaders, area councillors, community resource personnel, village-based diocesan sanitation promoters, primary school teachers. Some participants were already on board for improving hygiene and sanitation. Others preferred to cling to pastoral traditions on hygiene, such as open air defecation and burying feces under a small pile of dirt which are not compatible with the newly settled life of many pastoralists.

Objections to toilets included smell, flies, unacceptability of men and women sharing latrines, cost, and the unpleasant thought of putting all feces in one place. When households did accept latrines, they requested extremely large slabs 4 by 8 feet, which they would utilize for showering as well as for toilets. The project had budgeted \$20,000 for 2000 smaller slabs (about 4ft by 4ft) at \$10 per slab, so this request for much larger slabs created budgetary problems.

The preference for the larger household slabs was probably because community members had only seen the large school latrines, or had ideas about large bathrooms that include bathing areas, with likely no other concept of latrine size or designs. Offering to provide free slabs was probably a strategic error. Everyone waiting for their free slab wanted a large one. No one was taking the initiative to build their own latrines. The project was making very slow progress.

The meeting began with reporting current sanitation coverage of 2% for the project area. All leaders were asked to cast a secret ballot on whether they had a latrine at home or whether their household used the bush. The result was 15 household latrines and 29 households that went outside. "It's a disaster waiting to happen" responded some of the participants when they heard the results. Others reported that there were many diseases in the area related to water contaminated by open defecation. Some participants said they were nomads and should continue to live as their ancestors did, while others said times were changing. "We now have cell phones and electricity and schools, which we did not have before. Maybe we also need to change our sanitation practices."

Participants were given three toilet options to consider: deep pit latrines and two ecological toilet designs – the Arborloo (a shallow pit on which one eventually plants a tree when it is full) and the Fossa Alterna (alternating pits that can be emptied annually and the compost used as fertilizer), both eco-options are easy and inexpensive to build.

One Imam remarked he did not think ecological toilets would work for Muslims because they need to be kept relatively dry and Muslims wash over the pits. Facilitators replied that 40,000 Muslim households in Ethiopia use Arborloos with success and wash over them. Another participant wondered if fruits from trees grown from

former pits could be eaten. "Would we be eating feces?" she asked.

Facilitators took time to explain the meaning of compost and how animal and human waste decompose and provide nutrients as part of the natural cycle. Participants were assured that they would not be eating anything unclean. The importance of adding ash to toilets to prevent smell and flies was new information for many in attendance.

"We now have cell phones and electricity and schools, which we did not have before. Maybe we also need to change our sanitation practices."

It was clear that no progress in sanitation will be made until community leaders built their own household latrines and served as role models. Facilitators asked the leaders how many leaders would be willing to be a community role model by building a home latrine. Their first response was not to volunteer but to ask how much the Diocese would pay toward the latrine. The GWI Country Coordinator told the group that when she was a child in rural Kenya, every household built their own latrine. She emphasized that the GWI project supports communities through

knowledge "We will not do it for you," she said, "you are in the driver's seat." She then asked– "Who will commit to building a home latrine within the next six months, to show leadership for sanitation?" Nearly every hand in the room went up. Next she asked the head teachers of the primary schools if any one of them would like to demonstrate latrine options and have sanitation days at school. The hands of all 4 head teachers went up. Finally she asked for their suggestions for future work. They said they wanted more hygiene education, and they wanted public latrines at the new water points. Amazingly, the meeting had stimulated even the most stubborn participants who said they now wanted even more information. The Diocese of Garissa now plans to revise their budgets in order to allocate additional resources to promotional activities. They will focus on training latrine artisans and teach them to be hygiene promoters and will continue to mobilize local community leaders as role models for sanitation.

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