A strategy to eliminate water-borne disease in Lower Nyakach, Kenya with Friends of the Old (FOTO) a community-based organization

Funded by International Water and Health Alliances Davis, California
Solar Cookers Int’l’s Sunny Solutions Project
2003-2008, Nyakach, Kenya
Friends of the Old (FOTO) office
FRIENDS OF THE OLD (FOTO) PROJECT

Improving lives of the old and orphans

Making: solar cookers, fireless cookers, water testing and wash program.

Mobile library to schools.
Friends of the Old staff and board,
July, 2013
FRIENDS OF THE OLD
Reading glasses sorted to distribute
FOTO staff receives bicycles for transport within their locations, March, 2013
People gather for reading glasses distribution
Khobodo West Location, July 16, 2013
Entertainment by FOTO staff
Boxes of reading glasses to distribute
Recipients of glasses distribution
416 pairs distributed
Bob & Mary Beth Metcalf with Khobodo West leaders
Water testing with a Portable Microbiology Laboratory leads to treating drinking water with chlorine solution and solar pasteurization
WATER TESTINGS IN LOWER NYAKACH.

SAFE WATER PACKAGE DISTRIBUTION TO THE OLD.
50 Drinking water sources tested by FOTO staff July, 2012
How To Test Water

**Look for INDICATOR of Fecal Contaminants**

1) Always be present with numbers in human feces

2) Doesn't grow in the earth as Typhoid, Cholera etc.

3) Survive in water at low temperatures

4) Easy to detect

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Thousand

Million

Billion
**Colilert Test**

**FOOD SOURCES**

1. ONPG
   - **ONPG** (sugar)
   - E. coli + bact from environment
   - Turn **Colilert Yellow**

2. MUG
   - MUG
   - E. coli
   - E. coli = **BLUE** + gas
   - Bact from Environment
   - Red +/- gas

**Petrifilm**

**FOOD SOURCE**

1. BCIG
   - **BCIG**
   - Blue colony

2. LACTOSE
   - LACTOSE
   - ACIDS + gas

   - E. coli = **BLUE** + gas
   - Bact from Environment
   - Red +/- gas
Safe Water Package for Victoria Awino, age 70
Pasteurizing water in a Cookit
Pasteurizing drinking water
WAPI wax melted, water safe to drink
Petrifilm results from Lower Nyakach drinking water sources, January, 2012

Left: Kambuya Borehole, Central Nyakach location. Risk Level: Very high disease risk. Approximately 100 households use the source.
Right: Ogwedhi River, Central Nyakach location. Risk level: very high disease risk. Approximately 130 households use this source.
1.2% sodium hypochlorite
1 bottle (150 ml) treats 1,000 liters of water
Ceramic safe storage container, 20 liter jerry can to collect and treat water
WaterGuard, 3 drops per liter
WaterGuard distribution
Over 2 months, 9,600 families receive WaterGuard, ~40,000 people benefit
Identical products, 1.2% sodium hypochlorite, Aquaguard costs less. Starting August, 2013, 7,200 bottles of Aquaguard will be distributed monthly.
Aquaguard boxes August, 2013, for community health workers to distribute in each location
# Katito Health Centre, Central Location
## Lower Nyakach, 2012

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>July</th>
<th>November</th>
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<tr>
<td>Families provided With WaterGuard</td>
<td>0</td>
<td>400</td>
<td>800</td>
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<tr>
<td>Disease cases:</td>
<td></td>
<td></td>
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<tr>
<td>Clinical malaria</td>
<td>256</td>
<td>196</td>
<td>319</td>
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<tr>
<td>Diarrhoea</td>
<td>145</td>
<td>46</td>
<td>30</td>
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<tr>
<td>Typhoid Fever</td>
<td>18</td>
<td>13</td>
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</table>
“The people have since time immemorial believed that water was blessed from the beginning and cannot cause any diseases, but through the education and by showing them the results of the tested waters and telling them the dangers of the germs on the body, they are beginning to change their drinking habits. Looking back, many people agree that the many stomach related diseases they have suffered in the past have been a result of the bad river or pond water they have been drinking.”

March, 2013, report by Dinah Chienjo, FOTO Project Director
Talk to be given at IWA Development Congress, Nairobi, October, 2013

“The goal is zero: a strategy to eliminate water-borne disease in Lower Nyakach, Kenya”

Presented by:
Robert Metcalf, Professor Emeritus, California State University, Sacramento
&
Dinah Chienjo, Project Director, Friends of the Old, Nyakach, Kenya
Assembling for reading glasses
Kandaria West location, July, 2012
Seats of honor
Entertainment from orphaned girls school
Cholera poem presenter
CHOLERA! CHOLERA! CHOLERA!

*Cholera! Cholera! Where did you come from?*
You came bouncing like a monster! My mother was heavy, a month later, she died. Father died, followed by our new born baby.

*Cholera! Cholera! Where did you come from?*
Everywhere you go. You hear sad songs, the strong and the mighty are dying, dying and dying! Many lie in the grave covered with the soil, never to walk again.

*Cholera! Cholera! Where did you come from?*
I am left alone, no one to help me. I resemble a ball in the field, kicked by the players.

*Cholera! Cholera! Where did you come from?*
Please my brothers and sisters, Cholera is a very dangerous and deadly disease. Eat safe food, drink safe water. It is better to prevent than to cure. Never let anything deter you until you deter it.
Cholera! Cholera! Where did you come from?
Thanks to Mary and Bob for the WaterGuard, solar cookers, reading glasses, safe water packages and hybrid seeds. We now eat safe food, and drink safe water.

Cholera! Cholera! Nowhere to be seen.

Pleasure,
Thank you!
The Portable Microbiology Laboratory could have tested all water sources in Haiti when cholera started, October, 2010.
The International Water Association is pleased to announce that the 3rd IWA Development Congress and Exhibition will be held in Nairobi, the capital city of Kenya.

The overarching goal of the IWA Development Congress series is to identify, showcase and debate practical experiences and examples of service provision in developing countries that ‘work’, and critically, ‘work at large scale’. The Congress in Nairobi is therefore explicitly solutions focused and provides a unique opportunity to signpost best practices, applied research and enabling practices, challenges of today and tomorrow in an African context.

14 - 17 October 2013
Nairobi, Kenya
COMMUNITY ENGAGEMENT AND LEARNING FOR IMPROVED SERVICE PROVISION

Chair: Jacqueline Thomas, Australia

Introduction from the Chair Jacqueline Thomas, Australia

Community Managed Project for Rural and Small Towns Water Supply and Sanitation Services Delivery: Case of Benishangul Gumuz, Ethiopia Beshah Behailu, Ethiopia

Transition through Capacity Building Susmita Sinha, India

Community Learning Centers for the implementation and development of sustainable sanitation technologies in Chile Guillermo Saavedra, Chile

Grassroots Initiative to Solve the Safe Water Crisis Shamin Arfeen, Bangladesh

The Goal is Zero: A Strategy to Eliminate Water-borne Disease in Lower Nyakach, Kenya Robert Metcalf and Dinah Chienjo, US

Summary from Chair