SPOUTS of Water: Company Profile
2018
The Problem: Unclean drinking water has major negative health, economic, and social ramifications for Uganda

Over 50% of Uganda’s 38M population drinks untreated water and another 44% boil water daily in order to sanitize it, creating numerous issues:

1. **Health**: #2 killer of children under 5 in Uganda (exceeds Malaria and AIDS)

2. **Productivity**: $170M USD loss in annual productivity

3. **Livelihood**: 85% of time treating water spent by women & children

4. **Environment**: 360M tons CO₂ from boiling water annually

These trends can only be reversed through widespread behavior change and adoption of a sustainable water treatment option.
The product: Competing water treatment solutions are not sustainable

<table>
<thead>
<tr>
<th>Breakdown of water treatment solutions in Uganda:</th>
<th>Effective</th>
<th>Convenient</th>
<th>Cheap</th>
<th>Sustainable</th>
</tr>
</thead>
<tbody>
<tr>
<td>4% purify</td>
<td><img src="image" alt="Chlorine tablets" /></td>
<td><img src="image" alt="Imports filters" /></td>
<td><img src="image" alt="Bottled water" /></td>
<td><img src="image" alt="Boiling" /></td>
</tr>
<tr>
<td>44% boil (17M)</td>
<td><img src="image" alt="Effective" /></td>
<td><img src="image" alt="Convenient" /></td>
<td><img src="image" alt="Cheap" /></td>
<td><img src="image" alt="Sustainable" /></td>
</tr>
<tr>
<td>53% don’t treat water (20M)</td>
<td><img src="image" alt="Effective" /></td>
<td><img src="image" alt="Convenient" /></td>
<td><img src="image" alt="Cheap" /></td>
<td><img src="image" alt="Sustainable" /></td>
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SPOUTS’ unique local production enables a sustainable solution

Source: Uganda Bureau of Statistics (UBOS) and ICF International Inc. 2012
The Solution: SPOUTS produces the Purifaaya filter line – the only locally made water filters in Uganda

The Purifaaya

20 liter capacity
Best for households

The Purifaaya XL

65 liter capacity (includes a stand)
Best for schools and offices
The Solution: The Purifaaya is an effective and locally produced solution

The Purifaaya ceramic water filter effectively eliminates 99.9% of bacteria...

...and is produced in our factory right outside of Kampala.

Anatomy of the Purifaaya

PREVENTS CONTAMINATION

ELIMINATES BACTERIA (99.9%)

HOLDS FILTERED WATER

SERVES CLEAN WATER

SOUTS factory in Nakawuka, Uganda

One of 20 factory workers helping produce the ceramic water filters
The Solution: By locally manufacturing ceramic filters, SPOUTS provides a sustainable solution to Uganda’s needs

<table>
<thead>
<tr>
<th>Effective</th>
<th>Convenient</th>
<th>Cheap</th>
<th>Sustainable</th>
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<tr>
<td>Proven 99.9% effective by the Uganda Ministry of Water and Environment</td>
<td>Designed with the “consumer-in-mind” to ensure low maintenance and enjoyable taste</td>
<td>Only filter produced in Uganda from locally sourced materials to guarantee affordability</td>
<td>Integrated into local economy to create staying power</td>
</tr>
</tbody>
</table>

- Microscopic holes in the filter remove bacteria from water
- Silver nitrate coating ensures water stays pure
- Filter lasts for 2+ years and requires low maintenance (simple cleaning every ~2 weeks)
- Semi-translucent bucket allows easy monitoring of water level and prevents recontamination
- 99% of raw materials are sourced from Uganda
- Local production limits transportation costs and stimulates the economy
- Over 80% of commercial sales sold through Direct to Consumer program, in which we offer financing plans for customers and sell to savings groups
- ~90% of our staff are Ugandan, with strong representation among management team
Our manufacturing process: Fostering economic growth and manufacturing industry in-country

The Purifaaya is the only locally produced water filter in the Ugandan market, made with local clay and plastic in a factory an hour outside Kampala.

1. Raw materials of yellow clay, black clay, sawdust, and grog (broken pottery used as filler) are ground into a fine powder and mixed together.

2. Water is added to the clay mixture and SPOUTS workers knead the soft clay into blocks to be pressed into filters.

3. Pressed filters receive touch-ups to smooth imperfections and are fired in the kilns. After firing, filters dry for 4-6 weeks.

4. Each filter is tested for safety, painted with silver nitrate, and then assembled with locally made plastic buckets to complete the filter.

Our factory employees over 25 local Ugandans, providing them steady wages, health and life insurance, and jobs training programs.
History: SPOUTS has built the foundation for a strong business over time

**Inception (2010 – 2014)**

- 2010 – Kathy Ku interns in Uganda and is struck by the lack of access to safe water
- 2011 – Kathy teams up with fellow Harvard student John Kye to start SPOUTS of Water

**Pilot (2015)**

- 2012 – Original factory is opened to pilot production of filters
- 2014 – Kathy and John finalize design for ceramic filter
- 2015 – First commercial sales are made

**Fundamentals (2016 – 2018+)**

- New factory opened in April 2017, with an annual capacity of ~100K filters
- Offering of financing program for customers that enables greater affordability
- Manufacturing process streamlined to reduce costs and enable ~40% gross margin
Physical Filtration and Chemical Disinfection

Purifaaya works in two ways: Physical Filtration and Chemical Disinfection. The tiny pores in the clay trap all germs and disease-causing bacteria, while the thin layer of silver nitrate kills any remaining germs within the clay (the water below is natural and contains no harmful chemicals).
Filter Specifications

- Filtration rate: average of 3-4 liters per hour
- Life span: 2-3 year guarantee
  - After three years, it remains safe but filtration becomes slower
- Pathogens removed: Bacteria and protozoa
- E. coli reduction: >99.99%
- Turbidity (cloudiness of the water) reduction: >94%
- Container capacity:
- Household Purifaaya: 20L
  - Clay filter holds 10 liters
  - Safe storage capacity at the bottom of bucket: 10 liters
Maintenance

• Every two weeks the Purifaaya should be cleaned as follows:
  • Take a clean cloth and wipe the inside of the clay to clear out any dirt- do NOT use soap
  • Take the clay portion out of the plastic, and wash the plastic bucket, tap, and cover with water AND soap (just like a normal dish)
• In addition to regular cleaning, water should be poured into the filter for continuous filtration and to ensure that there will always be enough safe water in the bottom of the bucket
# Trust and Quality Assurance

**Ministry of Water & Environment**

**National Reference Water Quality Laboratory - Entebbe**

**Certificate of Analysis**

**Client Name:** Spouts of Water Ltd

**Client Address:** Busiro Block 376, Plot 895 Wakiso

**Sample Type:** Treated Water

**Product:** Ceramic Water Filter

**Analysis Completion Date:** 12/5/2015

<table>
<thead>
<tr>
<th>Parameters</th>
<th>% Removal</th>
<th>Test Results</th>
<th>US 2012:2008 Drinking Water Standard class 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Coliforms (CFU/100ml)</td>
<td>99.99</td>
<td>&lt;1</td>
<td>Not Detected</td>
</tr>
<tr>
<td><em>E. coli</em> (CFU/100ml)</td>
<td>99.99</td>
<td>&lt;1</td>
<td>Not Detected</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>46.30</td>
<td>1.96</td>
<td>5</td>
</tr>
<tr>
<td>pH (Units)</td>
<td>6.9</td>
<td>7.6</td>
<td>5.5-8.5</td>
</tr>
<tr>
<td>Colour (PtCo)</td>
<td>88.00</td>
<td>3.00</td>
<td>15</td>
</tr>
<tr>
<td>Conductivity (µS/cm)</td>
<td>39</td>
<td>208</td>
<td>1500</td>
</tr>
<tr>
<td>Flow rate (L/min)</td>
<td></td>
<td>1.8</td>
<td>NS</td>
</tr>
</tbody>
</table>

**Principal Analyst Laboratories**

**Issued Date:** 12/5/2015

**Ceremonial Water Quality Reference Laboratory - Entebbe**
NATIONAL WATER QUALITY REFERENCE LABORATORY

PERFORMANCE ASSESSMENT OF THE CERAMIC WATER FILTER

The filtered water samples test results show microbiological characteristics that meet the required drinking water standard. The filter can effectively remove problematic constituents of microbiological nature in the water to up to 99.99% removal as shown in Table 1.

5.0 Conclusion
The treated water from the ceramic water filter is efficient and effective to produce water that meets the recommended standard of water for human consumption.

6.0 Recommendations
- The company should think of increasing the size of the filtration unit for large communities such as schools, etc.
- Regularly carry out cleaning and maintenance of the ceramic water filter to avoid clogging as instructed every after 14 days.
Our impact to date: Below is our impact to date, with significant growth ongoing in 2018

- **25,000+** filters sold
- **9,335** commercial sales
- **14,081** aid installations
- **200+** partners
- **75,000+** tons CO₂ reduction
- **40+** local staff

*SPOUTS is on track to experience over 50% YoY growth in 2018*

Strong value to customer service, with high customer satisfaction ratings

Presence in over 300+ schools and institutions

Equivalent to the exhaust from driving over 70M kilometers

Over half of on-the-ground leadership roles filled by local staff

Source: Internal Sales Data as of August 31, 2018, Ignosi Purifaaya impact assessment, WHO Image Source: The Noun Project
Thank you for your interest in SPOUTS of Water!