



WASH FOR LIFE

STAGE 2 GRANTEE PROFILES

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MATHEMATICA
Policy Research

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STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$500,000

GRANT DURATION



COUNTRY
CAMBODIA

TYPE OF INTERVENTION

WATER KIOSK

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

CLEAN WATER KIOSKS | 1001FONTAINES

PROJECT DESCRIPTION

- **1001fontaines supports a network of franchised water kiosks that provide home delivery of clean water.** Local entrepreneurs are trained to produce safe water using 1001fontaines' treatment technology (sand filtration and ultraviolet disinfection), drawing from the nearest available surface water source to keep costs down.
- **Financial sustainability is possible at scale.** The price of the service is set based on local knowledge about households' ability to pay for water. New franchises are subsidized until they reach enough customers to break even on production costs (including the entrepreneur's livelihood and maintenance costs), after which point franchisees pay assistance fees to regional platforms that provide monthly water quality control, technical and business assistance, and support in marketing and outreach.
- **WASH for Life funding supports operational learning and growth toward scale for financial sustainability.** On average, individual kiosks need 25% penetration into villages to reach break-even. 1001fontaines and WASH for Life jointly determined that 240 sites would reach break-even at the regional platform level across Cambodia. Given existing market penetration, this goal implies the addition of 90 water kiosk sites in addition to the existing network. As of the most recent progress report, 1001fontaines had initiated 73 new kiosks.

TO LEARN MORE: [HTTPS://WWW.1001FONTAINES.COM/FR](https://www.1001fontaines.com/fr)

LEAKAGE PREVENTION IN MUNICIPAL WATER SYSTEMS | HIRAYA

STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$360,000

GRANT DURATION

2011 — 2018-21



TYPE OF INTERVENTION

DATA GATHERING

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

PROJECT DESCRIPTION

- **Hiraya Water is a smart water management company that reduces non-revenue water loss for municipal water utilities.** The Philippines-based company's primary customers are utilities that want to improve their financial position, thereby improving the quality of service they can provide.
- **Hiraya's R-Tap is an intelligent pressure management system,** the first tool of its kind to be designed for the developing world and created by local engineers. At its core is a self-learning algorithm that utilizes strategically installed sensors to analyze the behavior of a water network and direct pump operations so as to maximize efficiency and minimize non-revenue water loss. The system is integrated with an online platform and allows utilities managers to remotely control changes in the water network.
- **WASH for Life funding supports two demonstration installations,** with two to three R-Taps per installation, in order to finalize demonstration agreements with water districts and ensure that R-Tap hardware passes reliability tests. Hiraya is also developing a sales and distribution strategy and working with partners to develop a pathway to scale.

TO LEARN MORE: [HTTP://WWW.HIRAYAWATER.COM/](http://www.hirayawater.com/)

WATER





CONTAINER-BASED SANITATION | SOIL

STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$500,000

GRANT DURATION

2011 — 2018-21



TYPE OF INTERVENTION

CONTAINER BASED SANITATION
FECAL SLUDGE MANAGEMENT

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

PROJECT DESCRIPTION

- **Sustainable Organic Integrated Livelihoods (SOIL) rents small, portable household toilets for \$5/month.** In 2016, 5,000 people used SOIL's household toilets.
- **The waste is collected, processed into fertilizer, and sold for profit.** SOIL's treatment centers use a low-maintenance composting method.
- **WASH for Life funding supports operational improvements to make the business model financially sustainable.** Because scaling alone will not be enough to break even, SOIL is testing and implementing several ways to bring down operating costs and generate increased revenue, including:
 - Experimenting with increased user payments, weekly rather than monthly, and an initial installation fee
 - Implementing a mobile payment system to avoid door-to-door payment collection and enable diaspora payments
 - Experimenting with incentives (e.g. commissions on sales & revenue) paid to neighborhood collection supervisors
 - Streamlining its supply chain and contracting out select components of the service chain
 - Streamlining its customer relation management system
- **The ultimate goal is for local individuals to oversee local operations.** To this end, SOIL is developing and implementing a training module for potential franchise owners.

TO LEARN MORE: [HTTPS://WWW.OURSOIL.ORG/](https://www.oursoil.org/)

SANITATION



STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$1,499,984

GRANT DURATION



TYPE OF INTERVENTION

CONTAINER BASED SANITATION
FECAL SLUDGE MANAGEMENT

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

SUSTAINABLE SANITATION IN URBAN SLUMS | SANERGY

PROJECT DESCRIPTION

- **Sanergy addresses Kenya's urban sanitation crisis through profit-generating toilet micro-franchises.** Sanergy manufactures Fresh Life Toilets and sells them to institutions, households, and micro-entrepreneurs, who run them on a commercial pay-per-use basis. These entrepreneurs (Fresh Life Operators) provide management and marketing services locally, while receiving training and operational support. Sanergy collects waste daily and converts it to organic fertilizer and animal feed, two additional revenue streams.
- **Sanergy used Stage 2 funding from WASH for Life to continue to refine and scale its model in Mukuru, Kenya.** Sanergy previously used Stage 1 support to pilot 60 toilets that provided daily sanitation services to nearly 3,000 individuals. With Stage 2 funding, Sanergy sought to accomplish five goals: 1) establish 700 toilets in the target area; 2) employ 350 Fresh Life operators; 3) provide 70,000 people with access to improved sanitation services; 4) remove 2,800 cubic meters of fecal sludge annually from the targeted area; and 5) process all fecal sludge into a saleable by-product.
- **Sanergy nearly met its targets for the number of toilets and operators, but exceeded its target for access by 30 percent and almost doubled the amount of fecal sludge that was treated.**

LESSONS LEARNED

- **Diversification and adaptability proved critical** to Sanergy's successful expansion to new markets and ability to reach people outside public areas. Sanergy should incorporate residential and school service delivery models.
- **Unfamiliarity with organic fertilizer was a barrier to selling Sanergy's product.** Launching the Sanergy fertilizer brand as a comprehensive farmer support company allowed Sanergy to address this challenge.
- **Small and medium-sized farms growing high-value crops are a key market for Sanergy's fertilizer.** These farms liked their fertilizer and were willing to pay for it, suggesting this is an important growth opportunity.

TO LEARN MORE: [HTTP://WWW.SANER.GY/](http://www.saner.gy/)



Fresh Life

M-PESA

SHINE GINYOZI

STATION

3





FECAL SLUDGE PROCESSING INTO RENEWABLE FUEL | PIVOT WORKS

STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$1,000,000

GRANT DURATION



TYPE OF INTERVENTION

CONTAINER BASED SANITATION
FECAL SLUDGE MANAGEMENT

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

PROJECT DESCRIPTION

- **Pivot Works transformed the economics of fecal sludge treatment by replacing the notion of waste *disposal* at treatment plants to one of *production* of renewable fuel at factories.** Pivot intended to serve low-income cities with few sewage treatment alternatives by managing extremely low-cost facilities. When “Pivot Fuel” is produced at about ten tons per day and sold to industry (such as cement plants), revenue covers manufacturing costs.
- **Pivot Works aimed to become a sustainable operation in Kigali, Rwanda.** Using WASH for Life’s support for the first three years of costs at a new, larger-scale plant, Pivot Works sought to determine how best to commercialize its process and become sustainable.
- **The project could not be completed because the company shut down amid turmoil with its investors,** despite increased production and achieving a significant reduction in the cost of producing Pivot Fuel.

LESSONS LEARNED

- **Pivot Works' business model may not have been appropriate for for-profit investment at such an early stage.** Reliance on investors and debt can increase organizations' vulnerability—with the ability to call their debt, investors have the leverage to exert a high degree of authority over a company and its decisions.
- **Growth will be slow and incremental in this new sector and the approach to financing the organization must reflect the reality of the investment as a long-term play.** Pivot’s investors were surprised by lower- and slower-than-expected returns. It proved challenging to find and agree to a basis for comparison since Pivot presented itself as an energy company but struggled with challenges inherent to fecal sludge management.

TO LEARN MORE: [HTTP://WWW.PIVOTWORKS.CO/](http://www.pivotworks.co/)

SANITATION





FECAL SLUDGE PROCESSING INTO CLEAN WATER AND ELECTRICITY | DELVIC SANITATION INITIATIVES (DSI)

PROJECT DESCRIPTION

- **Delvic uses a Janicki Omni-Processor to produce electricity, potable water, and industrial ash from fecal sludge and solid waste such as plastic bags.** Delvic is the first West African private sector company to operate a public fecal sludge plant. (Delvic's Omni-Processor is partially supported by the Bill & Melinda Gates Foundation.)
- **The company is using WASH for Life support to collect a wide range of evidence to assess the scalability and sustainability of its business model, including:**
 - the amount of energy that can be produced and sold
 - the market's willingness to pay for the Omni-Processor's products (e.g. electricity)
 - the number of people who can be reached
 - the amount of fecal sludge that can be processed
 - financial performance metrics such as operating costs, revenue, and profit

STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$1,000,000

GRANT DURATION

2011

2018-21



TYPE OF INTERVENTION

FECAL SLUDGE MANAGEMENT

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

SANITATION



TO LEARN MORE: [HTTP://DELVIC-SI.COM/](http://delvic-si.com/)



SANITARY EARTHEN FLOORING | EARTH ENABLE

PROJECT DESCRIPTION

- **Earth Enable is a social enterprise that seals dirt floors to make homes more sanitary.** Functionally, Earth Enable's flooring is comparable to concrete, which has been shown to reduce diarrheal diseases by 49% and parasitic infections by 78% (Cattaneo et al 2009) but is far more expensive than Earth Enable's product.
- **Earth Enable's innovation is an affordable solution that creates jobs for local entrepreneurs (masons).** Earth Enable uses soya bean oil which is 90% less expensive than the linseed oil generally used to seal dirt floors.
- **WASH for Life funding will support a randomized controlled trial of the health impact of Earth Enable flooring.** Outcomes include observed hygiene, diarrheal and parasitic infections, stunting, cognitive development of children, and self-reported quality of life.
- **WASH for Life funding will also support the pilot of scaling activities** in Rwanda, Uganda, and two other yet to be determined countries. Three scale models will be tested:
 1. Organic growth (i.e. the control group)
 2. A franchising model similar to water kiosk and other health product delivery systems
 3. Licensing the technology in exchange for royalties.

Each model will focus on operational learning around start up in new contexts, including how quickly masons and other staff are brought up to speed, cost differences across contexts, the relevance of united branding, how best to use partnerships, and whether and to what extent each model can effectively reach the poorest households.

Earth Enable previously had a Stage 1 pilot grant not funded by WASH for Life but was brought into the WASH for Life portfolio for its Stage 2 grant.

TO LEARN MORE: [HTTPS://WWW.EARTHENABLE.ORG/](https://www.earthenable.org/)

STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$1,500,000

GRANT DURATION

2011

2018-21



TYPE OF INTERVENTION

FLOORING

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL



STAGE



GRANT AMOUNT \$1,499,578

GRANT DURATION



COUNTRY
BANGLADESH

TYPE OF INTERVENTION

HANDWASHING
POINT OF USE WATER TREATMENT

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

MULTI-PART CHOLERA PREVENTION | JOHNS HOPKINS UNIVERSITY

PROJECT DESCRIPTION

- Household members of cholera patients are 100 times more likely to contract the disease than the general population.
- This project tested a health facility-based WASH intervention to reduce the risk of family member infections. Health facility workers implement the low-cost, easy-to-deliver Cholera-Hospital-Based Intervention for 7 Days (CHoBI7) which includes distributing chlorine tablets, soapy water bottles as an alternative to bar soap, and a pictorial model promoting handwashing with soap.
- WASH for Life funding supported a randomized controlled trial to estimate the impact of CHoBI7 and an investigation of low-cost ways to integrate the intervention into existing hospital services, in partnership with the Bangladesh Director of Disease Control.

LESSONS LEARNED

- Household members of cholera patients in the treatment group had 47% fewer *V. cholerae* infections than among the control group and no household member in the intervention group displayed *symptomatic* infection, compared with five percent in the control group. Based on these findings, the cost of CHoBI7 is estimated to be \$227 per cholera case averted.

TO LEARN MORE:

George, C. M., et al. (2016). Randomized controlled trial of hospital-based hygiene and water treatment intervention (CHoBI7) to reduce cholera. *Emerging infectious diseases*.

HAPPYTAP HAND-WASHING DEVICE | WATERSHED

PROJECT DESCRIPTION

- **WaterSHED's HappyTap device brings soap and water together in an affordable and attractive handwashing station that makes hygienic behavior convenient and easy.** Combining soap and water helps overcome key behavioral barriers to consistent handwashing.
- **WaterSHED used Stage 2 funding from WASH for Life to evaluate whether a market-based approach could achieve sustainable distribution at scale,** aiming to sell 75,000 units across 15 provinces in Vietnam and export an additional 6,000 units. WaterSHED also sought to determine whether an attractive and convenient device could enable consistent handwashing practices. The work built on a pilot supported by a Stage 1 grant.
- **WaterSHED struggled to scale.** HappyTap achieved sales of 10,000 units (at nearly 50 percent gross margin), which reflected strong demand, but not of the magnitude originally anticipated. WaterSHED and WASH for Life scaled back targets and milestones, resulting in a smaller total award. Nonetheless, WaterSHED's global network continues to support the Happy Tap Company in Vietnam, which designs, manufactures, sells, and exports the HappyTap.

LESSONS LEARNED

- **Demand must be generated for an entirely new product category – not just a new product.** WaterSHED had assumed HappyTap would be scalable merely because market research showed it to be widely loved.
- **Scale-marketing is needed to reach the type of volume needed to make HappyTap sustainable.** Consumers can be persuaded to invest in a HappyTap via intensive interpersonal marketing, but this is not sufficient to reach scale. A wide and deep set of distribution and sales channels are necessary to reach scale volume, including door-to-door, market booth selling, selling to organizations that place the device in schools, wholesalers that re-sell to private companies, and retail stores that commit to a minimum number of purchases. This type of intensive scale-marketing has significant resource implications.

TO LEARN MORE: [HTTP://WATERSHEDASIA.ORG/HAPPYTAP_SINK/](http://watershedasia.org/happytap_sink/)

STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$650,915

GRANT DURATION



TYPE OF INTERVENTION

HANDWASHING

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

HYGIENE



STAGE

PILOT

TEST

SCALE

GRANT AMOUNT \$993,488

GRANT DURATION



TYPE OF INTERVENTION

HANDWASHING

TYPE OF INNOVATION



TECHNOLOGY



SERVICE DELIVERY



BUSINESS MODEL

SOAPY WATER HANDWASHING STATION (SW-HWS) | IPA

PROJECT DESCRIPTION

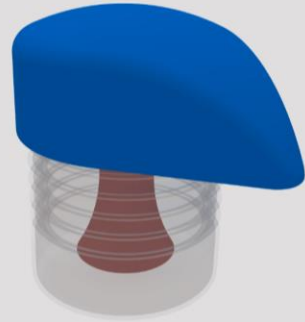
- **Innovations for Poverty Action (IPA) developed an economical handwashing system for use in contexts without piped water.** The Soapy Water Handwashing Station (SW-HWS) or Povu Poa in Kiswahili (“Cool Foam”), is a light weight, portable, and culturally acceptable product that conserves water and soap. Low cost when manufactured at scale, each Povu Poa station costs just \$12.
- **WASH for Life funding supported the human-centered design process and several research activities** including a randomized controlled trial of the system in schools and a household willingness-to-pay study. The grant also added additional measurements to an existing randomized controlled trial to assess the impact of the handwashing on health and development in the first two years of life (the WASH Benefits trial funded by the Bill & Melinda Gates Foundation).

LESSONS LEARNED

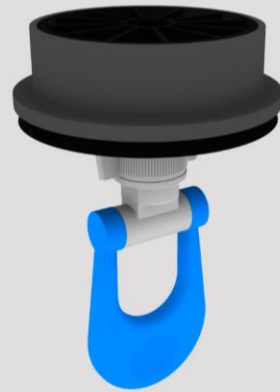
- **The Povu Poa system uses 30-77 percent less water and 90 percent less soap** than conventional handwashing stations. The result is substantial savings of money and time for households.
- **Most households were willing to purchase a Povu Poa, but only if it was heavily subsidized.** 86 percent of households purchased a Povu Poa with a 60 percent subsidy; 29 percent purchased with a 30 percent subsidy.
- **The Povu Poa system increased the share of students who washed their hands after using the toilet.** Although the Povu Poa hardware experienced some degradation from sun exposure and use by children over the 6 months of the trial, schools with the systems had water and soap available more than 40 percent of the time (compared to 2 percent in pre-intervention visits).
- **IPA determined that the best entry market for initial sales would be through the government, schools, and clinics.** The approach would expand reach, enable quicker capital cost payoff than alternatives, and align with marketing channels trusted by consumers. IPA partnered with MSR Global Health, a manufacturer of low-cost products for low-income communities, to refine and commercialize Povu Poa as a saleable product.

TO LEARN MORE: [HTTPS://WWW.POVERTY-ACTION.ORG/STUDY/SOAPY-WATER-HANDWASHING-STATIONS-KENYA](https://www.poverty-action.org/study/soapy-water-handwashing-stations-kenya)

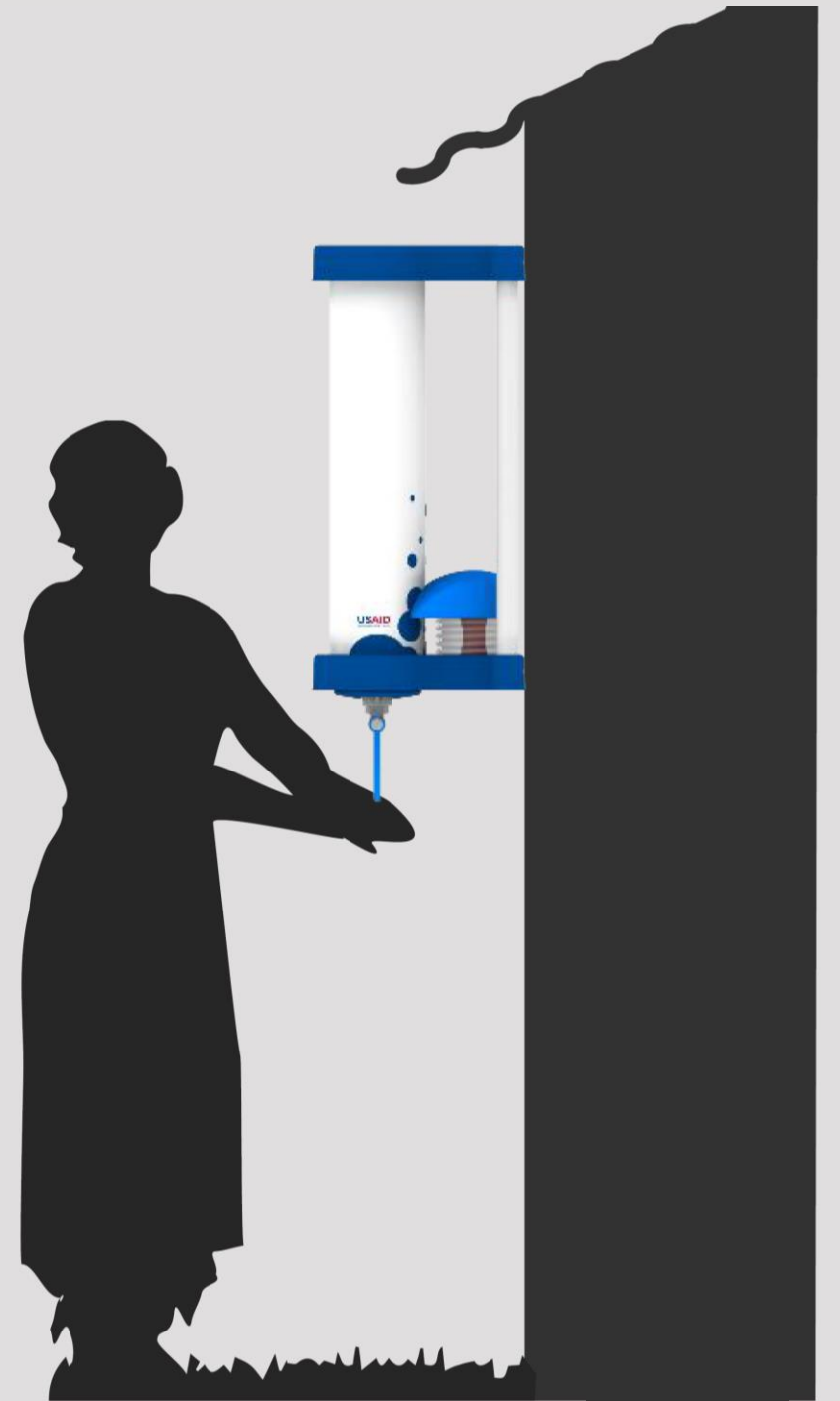
The Povu Poa



Foaming Soap



Water Frugal Tap



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WASH for Life: Stage 2 Grantee Profiles

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