John Schoch, CEO of Profile Products — a multi- million dollar company that manufactures and distributes products for soil and water management in 90 countries — decided four years ago to direct his company’s expertise to deal with a global crisis: provision of clean water storage and supply at the household level.

The CEO established ProCleanse LLC in 2010 as a for-profit subsidiary to Profile and invested huge sums in intensive research and development which culminated in the release of a product that generates five gallons of clean water an hour and lasts for 10years without chemical additions, components replacements, or frequent maintenance. The product works by users pouring unfiltered/unpurified water into the top of the product, a blue plastic bucket weighing about 40 pounds. As gravity pulls the water through the system, ceramic particles trap micro-organisms and then metal ions attach to the pathogens’ cell walls, and renders bacteria and viruses present harmless. The disinfected water flows and gets stored in an adjacent 18-liter chamber which is then fetched for drinking.



*The ProCleanse Filter*

To roll out the product in the real world, ProCleanse connected with the Global Environment and Technology Foundation (GETF) a non-profit that supports sustainable development through collaborative partnerships. GETF through its network of partners linked up with IRC and WVI to foster the design and conduct an action research in Northern Ghana to test the viability of the product in addressing the challenges associated with treatment and safe storage of water at the household level in rural communities. A six month action research project was prepared by IRC in response to an RFP from GETF. The proposal was reviewed and appraised and eventually approved with funding from ProCleanse.

The goal of this project is to deploy 600- ProCleanse water filter products, assess the use, performance, and potential health impacts of the filter products in 300 lower-income households in eleven (11) communities in the Savelugu Nanton municipality in Ghana. Specifically, the objectives of the project are:

1. To determine the level of household acceptance and use of the ProCleanse filtration product through a **household survey**.
2. To evaluate how the ProCleanse filtration technology/product performs under various environmental conditions in northern Ghana through a **water quality study**.
3. To assess how the ProCleanse product is likely to compete within the business environment in Ghana through a **market study**.
4. To verify whether households perceive any health impact of the ProCleanse product (partly based on the household survey, partly on modelling).

**Process and Approach**

In the baseline data collection, 300 households in eleven (11) communities were selected using a combination of population, number of households, number of children under 5 years and community balloting techniques (in lieu of random sampling). Half of these households received filters at the beginning of the study and at the rest at the end) In the ~300 selected households, water samples are taken and questionnaires are conducted at the beginning, halfway and at the end of the study using FLOW phone devises. IRC is coordinating the household and market surveys (digitized questionnaire), whilst WVI is conducting the water sampling and laboratory analysis. Control sampling and analysis is being performed by GWCL.

**What is the Role Assigned to IRC in the ProCleanse HWTS Project**

As a knowledge and learning based organization that believes in socializing the challenges and concepts on new ideas, IRC has been assigned as the role of lead implementing partner to work with WVI-Ghana and University of Development Studies by bringing on board its:

* **Joint research planning skills**
* **Application of FLOW phone technology to improve data collection**
* **Piloting and documentation**
* **Learning at scale via testing, refining, planning and adapting methodology in ‘real world’ environment**
* **Feeding research results into policy dialogue**

These capabilities have been demonstrated by IRC in the project, under three pillars. These are:

1. **Design of protocols, programming of surveys, training**

* IRC has been instrumental in designing the instruments for Knowledge, Attitudes, Behaviour and Practices, which have formed the basis for the conduct of household surveys.
* It has also contributed to development of protocols for the water quality study which has been approved by the Ethics Committee.
* It has facilitated the development of surveys (programmed questionnaire) for the conduct of market study.
* Building on the FLOW WASH monitoring technology, IRC provided technical assistance and expertise to convert raw questionnaires into programmed surveys for HWTS data collection and data cleaning using android phone devise applications. This level of effort helped to speed up data collection by field enumerators
* It has also spearheaded the development of an enumerator handbook which provided guidelines for community entry and data collection
* IRC has facilitated the training of enumerators from UDS (10 graduates). The training involved a theoretical aspect which focused on the methodology for the study and a hands-on aspect which involved loading of surveys onto phones, demonstrations on the phone application, pretesting of the field data collection surveys among participants.

2. **Support to survey administration**

IRC also provided backstopping support in the piloting of the household surveys in one community with 25 households as well as administration of the baseline surveys in eleven (11) baseline communities. Most of the support involved managing trouble shooting emanating from imperfections in phone applications, wrong data posting and poor internet connections. The other part centred on data cleaning and support to the field team on data import and export.

3. **Data Analysis, Reporting on findings and Making of Recommendations**

Pulling together data generated from the household field surveys and water sampling results IRC has prepared and shared the first round progress report on content and financial issues with the GETF and ProCleanse. It has also facilitated a partners meeting to discuss and validate the findings and recommendations from the first progress report. The findings and recommendations made in the first progress report include proposals for:

* Improvements in the technical design of the ProCleanse HWTS Product to enhance performance and minimise contamination of the dispensing hose.
* Broadening of water quality analysis to cover Heavy Metals, especially manganese, iron and fluoride which are common in the study area. These additional analyses will also ensure compliance with Ghana regulatory standards.
* Strengthening hygiene promotion through sensitization, awareness creation and training interventions by the Municipal Assembly and WVI. This intervention is very weak in the research project.
* Discouraging open defecation to cut the transmission route for surface water contamination in some communities.

By going through these processes, lessons have been learnt to inform the review of surveys for planning and adaptation of methodology for the 2nd round of field surveys and studies which will be carried out in September 2014. It is envisaged that the results and lessons from the project will be used by IRC, GETF and ProCleanse to respond to a USAID DIV Call which has been initiated by GETF and is currently under discussion The objective of this move is to secure funding for uptake and scaling up of the research and marketing of the product in more rural communities.