

Innovation-to-Impact Assessment: ICChange CeraMaji Water Filtration System

A low cost, high efficiency water filtration system that's locally manufactured for resource-limited settings.

The CeraMaji is a household water filter for urban regions with limited access to clean water and sanitation, in particular slums and informal settlements. It is locally manufactured, decreasing the price point and creating local employment, trust and community buy in.

Desired Outcome: Self-sustaining local business that produce and deploy water filters. Each filter provides drinkable water for a family of five for 2-3 years.

Desired Impact: Clean water, long-term operating stability, scale

Why? An estimated 1 billion people lack access to safe drinking water worldwide, with the largest burden of mortality and morbidity affecting children under 5 due to diarrheal disease. Rural Kenyan families spend significant resources locating, securing, and maintaining access to clean water. Reducing diarrheal disease starts at the home with a household level, point of use water filter.

Why CeraMaji? The CeraMaji product addresses a critical pain point facing base-of-pyramid societies; without access to clean water. CeraMaji empowers individuals to invest in clean water and their own health, while supporting local economic growth and social infrastructure investment. Long-term operational sustainability will be achieved by integrating the CeraMaji social enterprise into the existing market.

Who? The team: ICChange has a multifaceted team with proven successes. They have developed and refined the CeraMaji ceramic water filter production process over the last nine years bringing backgrounds in business, health informatics, health policy, science, information technology, infectious diseases, surgery and medicine.

Where? Primary deployment in Kenya with scale in sub-Saharan Africa, South America and India.

>25,000 filters have been sold/distributed in regions both within and outside of Kenya.

Current status and successes: To date, >25,000 filters, impacting approximately 140,000 people, have been produced and sold in regions both within and outside of Kenya. Filters have been rigorously tested and are successful in removing 99.99% of Giardia and coliform bacteria from local stream water.

How? ICChange's key partnerships include:

60%
of deaths occurring in rural Kenya can be attributed to illnesses relating to unsafe drinking water and sanitation practices.

9BL LENS: 8 critical questions assessing Bold Impact potential.

- 1 | Does it align with 9BL Vision?** Yes, providing clean water to underserved regions helps enable individuals to live a full life.
- 2 | Can scale occur for exponential impact?** Yes, modular business model and positive cash flow will enable more factories in under-served regions to access larger populations.
- 3 | Is there, at minimum, a double impact win with the top interconnected impact areas – what is it?** Yes, CeraMaji addresses water, health, community, education and wealth (economic development).
- 4 | What is missing that 9 Billion Lives can deliver to drive even bigger impact?** The innovation is missing capital, geographical expansion, and reach.
- 5 | What is the time to impact? Can it be quickly realized?** Time to impact is short, starting in 6 months.
- 6 | What are the anticipated side effects and are they acceptable?** CeraMaji operates on a for-profit business model. It will challenge the aid model to water provision, but is ultimately more stable over long-term.
- 7 | Are desired outcomes and Impacts aligned?** Yes.
- 8 | Are objectives measurable and trackable?** Yes. ICChange measures filter distribution, use and the decrease in death rates and cases of health problems related to unsafe drinking water.

9BL Innovation-to-Impact Investment Plan: \$275,000 in two stages. Financing will be used primarily for the construction and development of a new centrally located micro-factory just outside of Nairobi. The team has experience constructing and developing ceramic water filter factories and completion is expected to take two to three months. The new factory will be built with the capacity to scale up operations and manufacture more filters to meet expected demand.

Core impact success elements:



Operations: Training a sales team



Acceptance: by health facilities and schools, the intended first points of sale



Word-of-mouth and support from communities to encourage neighbors to purchase the product



Education for users on implementation and life span of product. Filters come with hand washing education and IC Change has already developed a series of tools for community buy in.

An initial investment of **\$100,000** will initiate a program to reach **500,000 to 1 million people** living in East Africa with filters. It would be tremendous impact.

- Abdullah Saleh

Chief Executive Director | Innovative Canadians For Change (ICChange)

Risk Factors:

Customers / Market:

- Payment via weekly or monthly purchasing installments run the risk of customers taking the product and not following up with payments.

Mitigation: The filter retails for 1300 KSH (~13USD). Market research and customer satisfaction was very positive and the price point was more than acceptable. When they consider the economic benefits of a health investment. CeraMaji’s innovative social enterprise model is sustainable and not based on charitable donations and mass distribution.

Competitors:

- Alternative options for water purification include boiling water, chemical purification, point-of-entry filtration systems, and point-of-use devices. LifeStraw is one point-of-use competitor; but the use of multiple parts make it difficult to maintain and/or replace and their distribution model isn’t stable.
- AID focused competitors providing the market with free water filtration products pose a challenge undercutting the health product market.

Mitigation: The CeraMaji filter is a superior product technically and for ease of use. The local population likes it because it is not chlorine and doesn’t change the water taste. In fact the belief is that the water tastes cooler and better from a ceramic filter. Further, AID programs do not serve all of Kenya, in particular populations in unofficial and informal settlements. CeraMaji’s local production and distribution model and partnerships with leading health and aid organizations enables access to these populations that others can’t achieve.

Regulatory risk: Is not a significant risk factor

Deployment pathway risk:

- Recruitment and retention of qualified staff
- Creating and maintaining reliable partnerships

Mitigation: A strong team that has been working together to advance the program for several years and partnerships built on trust and on-the-ground deployment. Turnover is low.

9 Domains of Sustainability – Interconnectivity Assessment:

The CeraMaji water filter inter-connects with 5 domains of sustainability.



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