

Social Entrepreneurs Take on Water Scarcity

Clayton Stansberry

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To learn more about eFest 2020, EIX's competition for undergraduate business ideas, [click here.](https://eix.org/e-fest-guide/) (<https://eix.org/e-fest-guide/>)

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For Joshua Kao, any downpour of rain is a missed opportunity.

Why should [700 million people](https://www.unwater.org/water-facts/scarcity/) (<https://www.unwater.org/water-facts/scarcity/>) worldwide be experiencing water scarcity when perfectly potable water falls from the sky?

And how could he make a difference?

Like most innovations, Kao's started with those simple questions.

Building a social enterprise

Research for a college project at Rutgers University meant Kao found himself with an abundance of information about the refugee crisis.

Today, more than 70 million people worldwide have been forced from their homes and, of nearly [25.9 million refugees](https://www.unhcr.org/en-us/figures-at-a-glance.html), (<https://www.unhcr.org/en-us/figures-at-a-glance.html>) 2.6 million live in camps.

These temporary shelters are often erected at war-torn borders. But, for many, they are far from temporary. [As of 2018](https://www.raptim.org/largest-refugee-camps-in-2018/) (<https://www.raptim.org/largest-refugee-camps-in-2018/>), the three largest camps were in Bangladesh, Uganda and Kenya, with a combined population of nearly 1.5 million.

With all those people crammed in small areas, water scarcity is a real problem. Tanker trucks are used to bring in water, but that's a limited solution, and water collection options are challenged by cost, design and contamination.

As Kao pored over photographs depicting rows and rows of temporary shelter tents, he thought the living quarters themselves might be the answer. Could rain water collected from the tents, while it was still relatively clean, help relieve water scarcity in the camps?

From that germ of an idea, Kao launched [LivingWaters Systems](https://www.livingwaterssystems.org/) (<https://www.livingwaterssystems.org/>).

He teamed up with fellow Rutgers entrepreneurship student Joseph Bajor. Kao was impressed by Bajor's engineering skills. Bajor was intrigued by the potential behind Kao's idea.

Ideating and prototyping lead them to create a portable guttering system. Other rainwater harvesting gutter systems exist, but they are expensive, require permanent mounting and cannot be used on flexible or unstable structures like tents. The LivingWaters System was designed to challenge these limitations. Their hanging gutter is flexible, lightweight and easy to install on the tents, collecting rainwater that is then screened in a two-step process.



A drop in the bucket

Even with a prototype, a good idea is only as good as the ambition behind it. The LivingWaters team is scaling up, both in terms of people power and financial resources.

Kao and Bajor are now joined by Sakshi Sardar, as head of research and development, Caleb Kao, Joshua's brother, as chief financial officer, and Umair Masood as head of business development.

As a college student-led endeavor, they've found additional support and — including funding and press coverage — through accelerator or incubator programs and competitions. Opportunities like these help them find the right mentorship, the right teaching to help them make good decisions about continuing to grow their social enterprise.

The next step for the team is a second pilot, an opportunity to test their engineering revisions in a real world setting. At the same time, they're pursuing larger manufacturing and tooling and additional funding sources.

Additional search terms: global warming, climate change, drought, water systems, poverty, irrigation