

INNOVATION

PHOTOS BY EMMAKUELI AFFEDDA



The team which Kayondo works with and some of the staff of Makerere University



Kayondo's water purified system in Bwaise, Kampala. The system purifies all types of water

KAYONDO MAKES EFFECTIVE WATER PURIFIER

By Emmanuel Affedda

Limited access to safe water, especially for people living in slum areas, has resulted in waterborne diseases such as diarrhoea, cholera and typhoid. This can be prevented through consuming safe water. Concerned about this issue, Timothy Kayondo created a water purifier system which is chemical free, to enable people consume safe and clean water.

Kayondo, who holds a bachelor of science in industrial chemistry from Makerere University, says most people do not have time to boil water to make safe for drinking.

"Most people have no time to boil water to make it safer for drinking. I invented a

Timothy Kayondo and his team have come up with a water purifier to fight waterborne diseases such as typhoid, cholera and dysentery

system which also reduces the inconvenience and prevents diseases contracted from contaminated water," Kayondo says. He adds that he got sponsors for his project, including Resilient Africa Network, which aims at extending safe water to people. In addition to that, he got support from Makerere School of Public Health.

GETTING PRACTICAL
Kayondo was eager to put into practice the theory he learnt

at school. When he joined university in 2013, he met a classmate Daniel Lema who was employed. "Being a class co-ordinator, we became close friends. He took me to his workplace where he introduced me to the world of thinking beyond the classroom. During my free time, especially on weekends, I would go to his workshop and do some work. That is where I related the theory in class with what I was doing in the workshop."



Kayondo standing next to his water purified system in Bwaise

Later when Kayondo travelled to different areas in the country, he saw the dire

need for safe clean water and realised that he could do something for the people.

CHALLENGES

One of the common struggles that many Ugandan innovators face is the slow rate of local uptake of the products.

"Ugandans are not embracing local products, though some meet the required standards. I also have limited funding, even though I have sponsors. The National Council for Science and Technology could help me fill the gaps where the organisations sponsoring me cannot," Kayondo suggests.

However, he has registered some achievements, one of them being getting the sponsors, which has provided him mentorship, connections for market and exposure both locally and internationally, and financial support.

"The team which I work

HOW THE PRODUCT WORKS

He constructed two purifying systems: one for a community in Migga and Bombo in Luwero district, where people are now enjoying safe water and another one for commercial purposes.

The system is designed with an opening through which contaminated water is channelled. It passes over sand and gravel to remove suspended particles, then water continues and passes through activated carbon made from coconut shells before it is finally channelled through the ultra-violet light where microorganisms are killed.

Kayondo explains further: "The system purifies rainwater, ground water such as from boreholes and even chemical water. It uses natural methods for purification with no chemicals added."

Being a new technology, the local market has not embraced it yet, but currently he designs for communities, institutions, and other commercial purposes. A unit costs sh7m, although he says the price is negotiable.

He is also scaling down the system to a household-size version which will cost only sh1m, to enable more people get pure and chemical free water at affordable price. "The above costs are majority for the installations and once that is done, the rest, like maintenance, is free," Kayondo says.

PURIFIER

with made it to the top 22 out of over 200 applicants from Africa in a collaborative manner. However, we are still waiting for final results which was a big step in my life. Still, I am still waiting for more finals, where I hope to get the best results. Lastly, I was given a half scholarship for my master's at Makerere University from my sponsors and I am still negotiating with the university to make it full. "We expect to extend safe water to at least a half of the population in Uganda and to sensitise people about the benefits of drinking safe water in order to reduce the number of people who are dying from waterborne diseases," he concludes.

HIGHLIGHTS

- The purifier passes the water through sand and gravel layers, which is a common form of cleaning water of physical particles.
- The clean-looking water seeps through activated carbon made from coconut shells, which further purifies the water.
- Finally, the water is exposed to ultra-violet light which kills off the invisible microorganisms, leaving it extremely safe for consumption.
- There is no chemical used in cleaning the water, therefore the health of consumers is not compromised.

Justice to People can reduce case backlog, provide evidence

number is then sent to the by any organisation that signs