



News Release

For Immediate Release

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New study by Delft University of Technology suggests that aQysta could have the solution to age-old irrigation troubles in Nepal

The Barsha pump: Zero pollution with three times the crop yield

DELFT, The Netherlands -- Sep. 19, 2015 -- The battle against global climate change is heating up with the emergence of a new technology that changes how the world thinks about irrigation. A study released today by Delft University of Technology (TU Delft) cites promising results indicating that aQysta's Barsha pump product can improve irrigation practices and crop yields in Nepal without emitting harmful greenhouse gases that contribute to rising global temperatures.

Currently, only 21 percent of Nepal's land is cultivated due to challenging landscapes. But engineers at aQysta, a Netherlands-based water and sustainability start-up, have created the Barsha pump to try to increase the cultivatable land in the region. Using only naturally flowing river currents, a rotating wheel powers a compressed air mechanism that pushes water through hoses uphill to hard-to-reach fields. Since the Barsha pump is entirely hydro-powered and involves no fuel to operate, the device emits no pollutants, and requires minimal, low-cost maintenance.

The TU Delft study, performed over 18 months and conducted by graduate engineering and agricultural sciences students, yielded significant evidence that aQysta's Barsha pump outperforms traditional irrigation methods in the areas of crop production, farmer satisfaction, and pollution reduction.

Researchers provided 100 farmers in Nepal with Barsha pumps, and asked 100 more to continue their farming as normal, using fuel-powered irrigation methods. They found that farmers using Barsha pumps were able to grow three times as much rice and corn as their control group counterparts, due to their unique ability to irrigate terraced fields uphill. Further, in post-test interviews and surveys, 86 percent of farmers using Barsha pumps reported feeling "extremely

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satisfied” with the performance of the pumps, and 98 percent said that they would continue to use the pumps with further education.

Researchers also found that the use of Barsha pumps over 18 months significantly reduced overall Nepalese farm greenhouse gas emissions. Currently, greenhouse gas pollution caused by agricultural production accounts for over 12,000 megatons of carbon dioxide equivalent each year, with the use of traditional fuel and diesel-powered pumps contributing heavily to this figure. This study shows that Barsha pumps, when used on a large scale, have the potential to play a key role in combatting climate change.

“One of our target markets for our Barsha pump is Nepal, where 76 percent of people depend on agriculture for their livelihoods. While it has an abundance of rivers and streams, a big portion of the agricultural land remains without irrigation due to the high cost of implementation,” said Pratap Thapa, aQysta co-founder and commercial director. “Barsha pumps are the first step in what we hope becomes a global movement to produce products that increase food security while sparing the environment.”

So far, aQysta has demonstrated four Barsha pumps in Nepal, and has received their first orders for commercial implementation. The company hopes to grow this end-user market to 125,000 – 200,000 pumps in Nepal in the coming years. Further, with their successful execution in Nepal, aQysta seeks to take the Barsha pump to other countries, including Spain and Ecuador.

About aQysta

aQysta is a water and sustainability-focused start-up. Founded by Lennart Budelmann, Fred Henry, and Pratap Thapa in 2013, aQysta currently operates from the Yes! Delft incubator at the Delft University of Technology in The Netherlands. Through its Barsha pump (Nepalese for “rain pump”), a zero-emission hydro-powered irrigation pump, aQysta seeks to empower farmers and involve them in the fight to counter climate change and ensure a sustainable food future for the world. aQysta currently works with farmers and agricultural officials in Nepal, and plans to expand their reach to Spain and Ecuador in the coming years. aQysta has received the following accolades for their work in the areas of agricultural and water innovation: Dow Sustainability Innovation Student Challenge Award (2012), Climate-KIC Venture Competition’s most innovative clean tech start-up award (2014), and the Securing Water for Food project (2014). For more information, please visit www.aqysta.com.

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