

38

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TECHNOLOGY TO SINCE IT WAS
FOUNDED IN 2014 |B3

Singapore's water tech making waves worldwide

Cheryl Tan

Tech innovations and infrastructure that have helped water-scarce Singapore meet its daily demands are making waves worldwide.

The Republic is a leading global hydrohub with an ecosystem of more than 200 water companies and 25 water research centres spanning the entire water value chain, including water supply, used water management and stormwater management, such as flood protection measures, said national water agency PUB.

Some local companies have also been commercialising their solutions in other parts of the world.

Wateroam, a company founded in 2014, has developed portable water filters to deliver clean water to

countries as part of emergency response and humanitarian relief for disaster-hit areas. The technology, which is designed to be as simple as possible, has been exported to 38 countries, including Nepal, Malaysia and Indonesia.

Non-profit organisation Lien Foundation launched the Lien Environmental Fellowship in 2010 to equip Asian scientists and researchers from selected regional countries with the skills and resources needed to tackle challenges related to water and sanitation, as well as renewable energy projects in their home countries.

Successful applicants receive mentorship from the Nanyang Technological University's (NTU) Nanyang Environment and Water Research Institute (Newri), where they get technical and financial support to transform their ideas

into viable solutions.

As at last month, 18 projects have been administered in nine countries.

Lien Foundation chief executive Lee Poh Wah told The Straits Times that each project has to be tailored to the unique challenges of each community and the solutions have to be long-term, sustainable ones that have garnered local support and engagement.

Recently, the Lien Environmental Fellowship programme embarked on a new project to sample the water quality of Kathmandu's heavily polluted Bagmati River to determine the source and extent of the pollution.

There has been continuous dumping of solid and industrial waste as well as domestic sewage in the river. Noting the immense plastic pollution, Newri executive director



Children in Cambodia being introduced to the Roamfilter Plus water filtering device in 2018. PHOTO: WATEROAM

Shane Snyder said a possible solution could involve an upcycling technology, with plastic waste converted into diesel fuel to alleviate the high fuel costs that Nepal is experiencing. He added that plastic waste, when left in water, can cause toxic chemicals to leach, which can be harmful to the human body.

Freelance climate change and se-

nior watershed expert Madhukar Upadhyaya from Nepal, who was not involved in the project, said the idea was great, as it could provide jobs for those collecting plastic waste and incentivise households to save their plastic waste to sell it.

The Fellowship programme also saw some of Singapore's best innovations – such as its membrane

technology – benefit less-privileged communities.

For instance, Mandalay in Myanmar had extremely hard water – full of calcium content, as well as E. coli bacteria and other pathogens.

"We knew that the nanofiltration method (which is typically used to soften and disinfect water) would be the way to go – but there was no such system available," said Professor Snyder.

Local water tech firm Century Water picked up the intellectual property rights from NTU and the National University of Singapore – which also does water tech research – and installed a membrane nanofiltration system there at a low cost. "The operations are still going strong, despite the coup there and even amid the Covid-19 pandemic," added Prof Snyder.

Mr Lee said having clean water is the very foundation for health and human development.

"Without clean water, no country could ever escape poverty... and just as Singapore has become a global water hub, we have also benefited from foreign investment during the early days. So this is our way of paying it forward."

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