

By Cong Mu

It was a Wednesday night in Beijing in February, Frank Lee, 27, recalls, and a man was still making a sales pitch on his cell phone outside the Jianguomen subway station, his briefcase beside him.

This enthusiasm even in freezing weather was the impression Lee had about the Chinese “spirit of entrepreneurship.” Two weeks earlier, he had flown in from the headquarters of a Palo Alto, California-based startup company specializing in drip irrigation technology in the US.

“You never see such things in Western countries,” Lee said.

Now, Lee is putting his own spirit of entrepreneurship to the test, leading the business development of Driptech on the Chinese mainland.

Driptech was founded by Peter Frykman, a mechanical engineering PhD candidate at Stanford University. During a course called “Entrepreneurial Design for Extreme Affordability,” Frykman discovered a method to make an affordable and high-quality irrigation system for small-plot farmers, who are largely ignored by big commercial irrigation system manufacturers. So he put his studies on hold and started to build his enterprise in 2008.

For Lee, a chemical engineer by training, it was after five years working for Procter & Gamble, a Fortune 500 consumer product company, that he decided it was time to start doing something that could offer a social benefit as well as a profit.

He joined the startup in September 2010 in the US, and he requested to come to China.

Lee was born in Taipei, Taiwan, and went to the US at the age of 10. Lee said his grandfather was a tea farmer, and that was perhaps another motive for him to help farmers with the latest water-saving technology.

Low water efficiency

China has been struck by one of the worst droughts in 60 years since last

October, saying millions of hectares of wheat production areas drying up for water. As well as a lack of rainfall, poor irrigation infrastructure is a major problem. Many of the irrigation systems in China were built in the 1960s.

Christine Boyle, a Fulbright scholar at the Center for Chinese Agricultural Policy in Beijing, believes that China is not making good use of or conserving its water resources well.

According to Boyle, 65 percent of annual water withdrawals in China go to agricultural water use, but it is estimated that only 45 percent of this allocation ever reaches the farm plots.

The situation is made worse in North China (including the Huang-Hai-Huai River Basins) by the fact that the annual per-capita water availability in the region is well below the global water scarcity standard, or 1,000 cubic meters per person per year.

North China accounts for 19 percent of China's water resources, 47 percent of the population, 65 percent of arable land and 43 percent of GDP.

Boyle also observed that Chinese farmers' response to decreasing water availability “has been the widespread development of private groundwater markets that are pumping water at highly unsustainable rates.”

In an emergency measure, China sent out a large number of troops to dig wells for farmers during the

drought, and media reports said that, in some areas, the soldiers had to dig hundreds of meters to find water, much deeper than the previous level.

“Such excessive overexploitation of groundwater resources has resulted in the lowering of water tables and the rapid depletion of groundwater reservoirs,” the World Bank said in a report in 2009.

This has disrupted not only the ecological balance but also urban life. Damage to bridges and collapses of construction projects caused by land subsidence have been reported in major cities, such as Beijing and Shanghai.

Facing the mounting challenge posed by water shortages and groundwater depletion, the central government has made updating the irrigation system a national priority.

China is going to invest 4 trillion yuan (\$609 billion) in the next 10 years in water resources development and conservation.

Hu Jinglin, assistant minister of finance, told State television that the total investment in irrigation development, including public and private spending, is expected to reach beyond

200 billion yuan (\$30 billion) in 2011.

Bureaucratic hurdles

“This is a particularly good year for us,” Lee of Driptech said, partly thanks to the big-ticket investments pledged by the government.

Named by Business Week magazine as one of America's Most Promising Social Entrepreneurs in 2010, the startup was estimated to have recorded revenue of \$100,000 last year, five times the previous year's sum.

The company has already built a presence in India and now it aims to increase its market share in China too.

However, they will adopt a different approach in China, according to Lee. Unlike in India, “there are too many local governments involved, so we need to figure out which one to talk to.”

Although the demand for small-plot irrigation systems is huge, satisfying it can be complex. “In one county, it may be the water resources bureau that has a say in buying our equipment, whereas in another, it may be the poverty alleviation bureau,” said He Xiaoli, a Chinese employee in Driptech's Beijing office.

The company sold 200 sets of systems to Lingqiu county in Shanxi Province last year, and it is in discussion with a local agribusiness conglomerate to expand its sales network.

Based on the data collected from their Lingqiu program, the Driptech system has helped the farmers save water by 34 percent in two seasons.

However, for farmers who are used to flood irrigation, the habit is difficult to change, Lee said.

Because “the agricultural water price is almost negligible (less than a cent per cubic meter), some farmers just don't care about saving water,” Lee added. “So we still need to work with the governments.”

▶ Hi-tech relief for drought-hit farms

Water, water...



Southern Indian farmers using the Driptech irrigation system.

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